

S  
631.64  
L3ccs  
1989

**FINAL REPORT**

**CAMERON CREEK, SCHAFF AND DUNLAP PROJECT  
GOLDEN VALLEY COUNTY, MONTANA**

**MT A/E 88-46-124**

**JUNE 28, 1989**

**SPECTRUM ENGINEERING**

**MINING & CIVIL ENGINEERS**

MONTANA STATE LIBRARY



3 0864 0015 6632 5



**FINAL REPORT**  
**CAMERON CREEK, SCHAFF AND DUNLAP PROJECT**  
**GOLDEN VALLEY COUNTY, MONTANA**

**MT A/E 88-46-124**

**JUNE 28, 1989**

Prepared for: MR. BEN MUNDIE  
Reclamation Specialist  
Abandoned Mine Reclamation Bureau  
Montana Department of State Lands  
1625 Eleventh Avenue  
Helena, Montana 59620

Prepared by: SPECTRUM ENGINEERING  
Mining & Civil Engineers  
3302 Fourth Avenue North  
Billings, Montana 59101

William C. Maehl, P.E.  
Project Engineer

Bill Wolff  
Project Inspector



Digitized by the Internet Archive  
in 2016

<https://archive.org/details/finalreportcamer1989spec>

# CAMERON CREEK, SCHAFF, AND DUNLAP FINAL REPORT

## I. INTRODUCTION

### A. Project Objectives

This bid package contained three separate, underground coal mine reclamation sites. The reclamation work was undertaken to close mine openings, backfill subsidence, remove debris, cover or bury coal slack areas and neutralize all slack areas. After completion of earthwork and site preparation, all disturbed areas will be revegetated by seeding, fertilizing and mulching. The completion of the reclamation work will eliminate all of the current safety hazards and return the land to a safe environment.

### B. Site Description and Location

#### 1. CAMERON CREEK

The CAMERON CREEK site is located towards the eastern edge of Golden Valley County on a wide, gently sloping ridge above the east side of Cameron Creek, a tributary of the Musselshell River. The surrounding area is open, gently rolling grassland, broken at intervals by uplifting of the underlying sandstone. For construction purposes, the Cameron Creek sites have been separated into two site plans: Cameron Creek Loadout and Cameron Creek Vipond. The topography varies from 4300 to 4360 feet in elevation. The highest point in the area rises to 4500 feet to form a plateau just west of the loadout area. The vegetation consists of native grasses, sagebrush, and cactus.

The mine locations are on both sides of the Cameron Creek county road which is the north, south line between Sections 22 and 23, with the location more particularly described as the E  $\frac{1}{2}$  of the E  $\frac{1}{2}$  of Section 22 and the W  $\frac{1}{2}$  of the W  $\frac{1}{2}$  of Section 23, Township 10 North, Range 21 East, Golden Valley County, Montana as shown on the Site and Vicinity Maps.

#### 2. SCHAFF

The SCHAFF site is located 3000 feet north of the CAMERON CREEK loadout site on the same coal outcrop. The topography varies from 4380 to 4400 feet in elevation.

The mine location is 1600 feet west of the Cameron Creek county road, with the location more particularly described as the E  $\frac{1}{2}$  of the NW  $\frac{1}{4}$  of the SE  $\frac{1}{4}$  of Section 15, Township 10 North, Range 21 East, Golden Valley County, Montana as shown on the Site and Vicinity Maps.



CAMERON CREEK, SCHAFF, AND DUNLAP  
FINAL REPORT

B. Site Description and Location (Cont.)

3. DUNLAP

The DUNLAP site is located almost 7 miles north of Ryegate. The gentle sloping grasslands drain southward into Careless Creek south of the small town of Franklin located on the railroad. The topography varies from 3885 to 3925 feet on top of the southwest to northeast running ridgeline. The vegetation consists of native grasses, sagebrush, cactus, pine trees and cedar bushes.

The mine location lies in the NW  $\frac{1}{4}$  of Section 6, Township 7 North, Range 20 East, Golden Valley County, Montana as shown on the Site and Vicinity Maps.

C. Land Ownership and Access

1. CAMERON CREEK

The CAMERON CREEK site is owned by Edgar Lewis, Lavina, Montana 59046 at phone 406/575-4447 or 406/538-8622. The Lewis's have owned the land since the 1940's. They transferred ownership to the Lewis Ranch Inc. on 2/22/1967 (Plat Book 94, Page 571). Mr. Lewis lives 0.5 west-southwest of the Vipond site on the south line of Section 22. The access route is fairly easy to find. You proceed north out of Lavina to the intersection of Highways 3 and 12. Turn west on Highway 12 for 1/2 mile and then proceed north on the East Red Hill gravel road, then Middle road, then Emory road, then East Red Hill Road and finally the Cameron Creek road (all marked with road signs).

2. SCHAFF

The SCHAFF site is owned Nicholas and Grace Schaff, 488 SE Bench Road, Lavina, Montana 59046 at phone 406/636-4676. Nick and Carol bought the land in 10/23/1958 (Plat Book 94, Page 229). Carol gave her share to Nick on 6/3/1969 (Plat Book 100, Page 248). On 7/15/1981 (Microfilm D, Page 2183) Nick and Grace became tenants in common with an undivided 1/2 interest. They live 4.8 miles south-southeast of Lavina on SE Bench Road. Access to this site is by proceeding about 3/4 miles north of the Cameron Creek site on the Cameron Creek road. After crossing a cattle guard you turn left and head due west along the fence line. At the end of the fence (1/4 mile), you turn south (left) and proceed 600 feet to the project site.





CAMERON CREEK, SCHAFF, AND DUNLAP  
FINAL REPORT

C. Land Ownership and Access (Cont.)

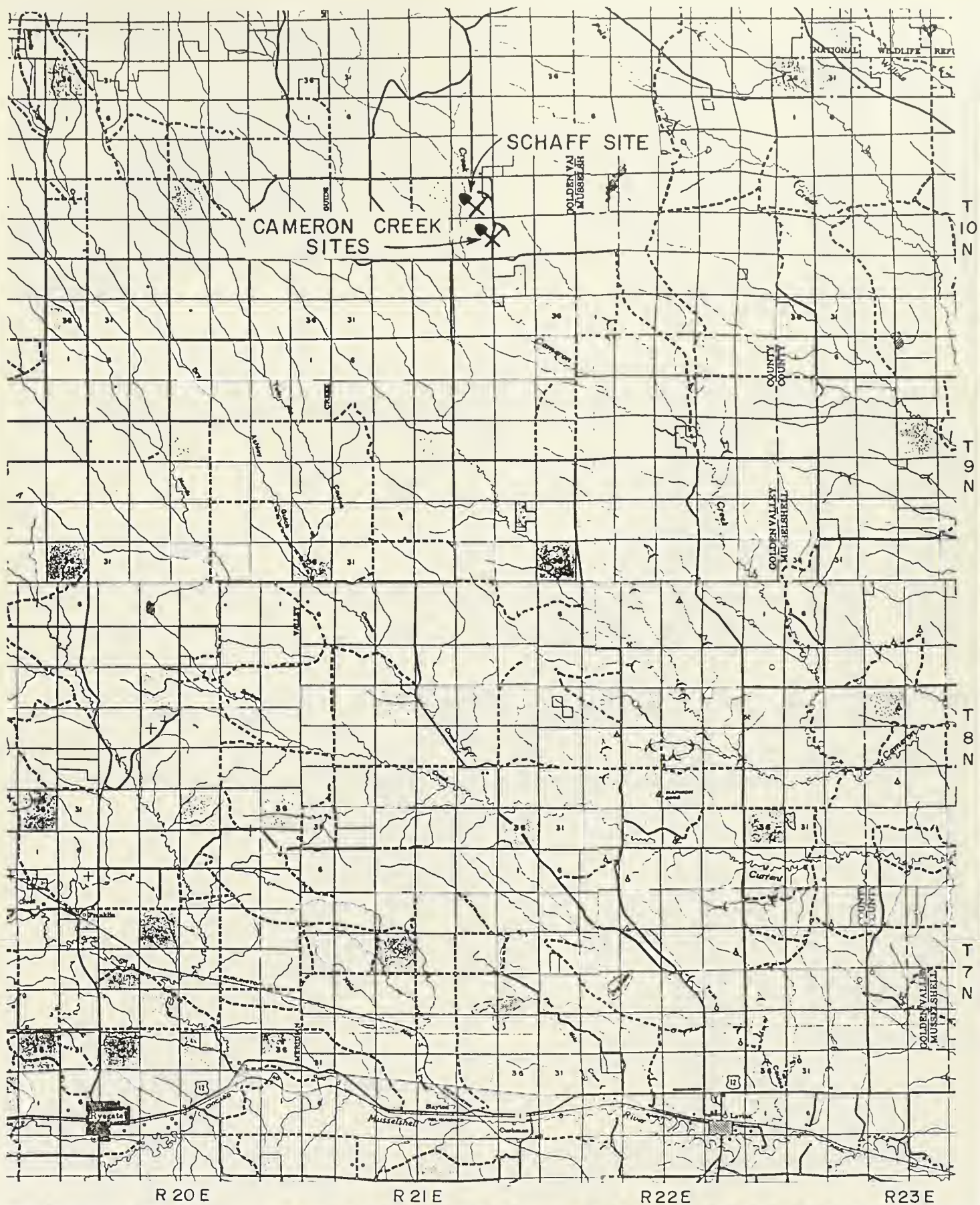
3. DUNLAP

The DUNLAP site is owned Edgar Dunlap, P.O. Box 117, Sand Coulee, Montana 59472 at phone 406/736-5275. Edgar acquired 51% of Lots 1, 2, 3, 4, 5, SE $\frac{1}{4}$ NW $\frac{1}{4}$ , and S $\frac{1}{2}$ NE $\frac{1}{4}$  (north half of Section 6) on 5/8/1952 (Plat Book 74, Page 19-20) and acquired the remaining 49% on 3/24/1961 (Plat Book 88, Page 525-526). He has the property leased to Jessie Zeier (his sister) who is the Ryegate Postmistress, P.O. Box 53, Ryegate, Montana 59074 at work phone 406/568-2362 or home phone 406/568-2255. She has it subleased to Eugene Taber, Shawmut, Montana 59078 at phone 406/632-4169.

Access to this site is by proceeding north out of Ryegate on a paved road to Franklin and then continuing north 2 miles on a gravel road. You turn left through a barbed wire gate and proceed 3200 feet north-west past two old wooden farm buildings, over the top of a earthen reservoir to the project site.

There is no restricted access via padlocks, etc. to any of the three sites.





STATE OF MONTANA — DEPARTMENT OF STATE LANDS  
ABANDONED MINE RECLAMATION BUREAU—RECLAMATION DIVISION

VICINITY MAP

SITE CAMERON CREEK AND SCHAFF

GOLDEN VALLEY COUNTY, MT; TOWNSHIP 10 N RANGE 21 E

SECTION(S) 15, 22, & 23

MAP SCALE: 1" = 3.5 Miles

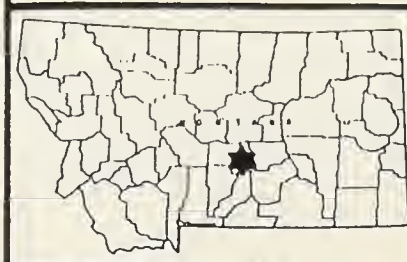
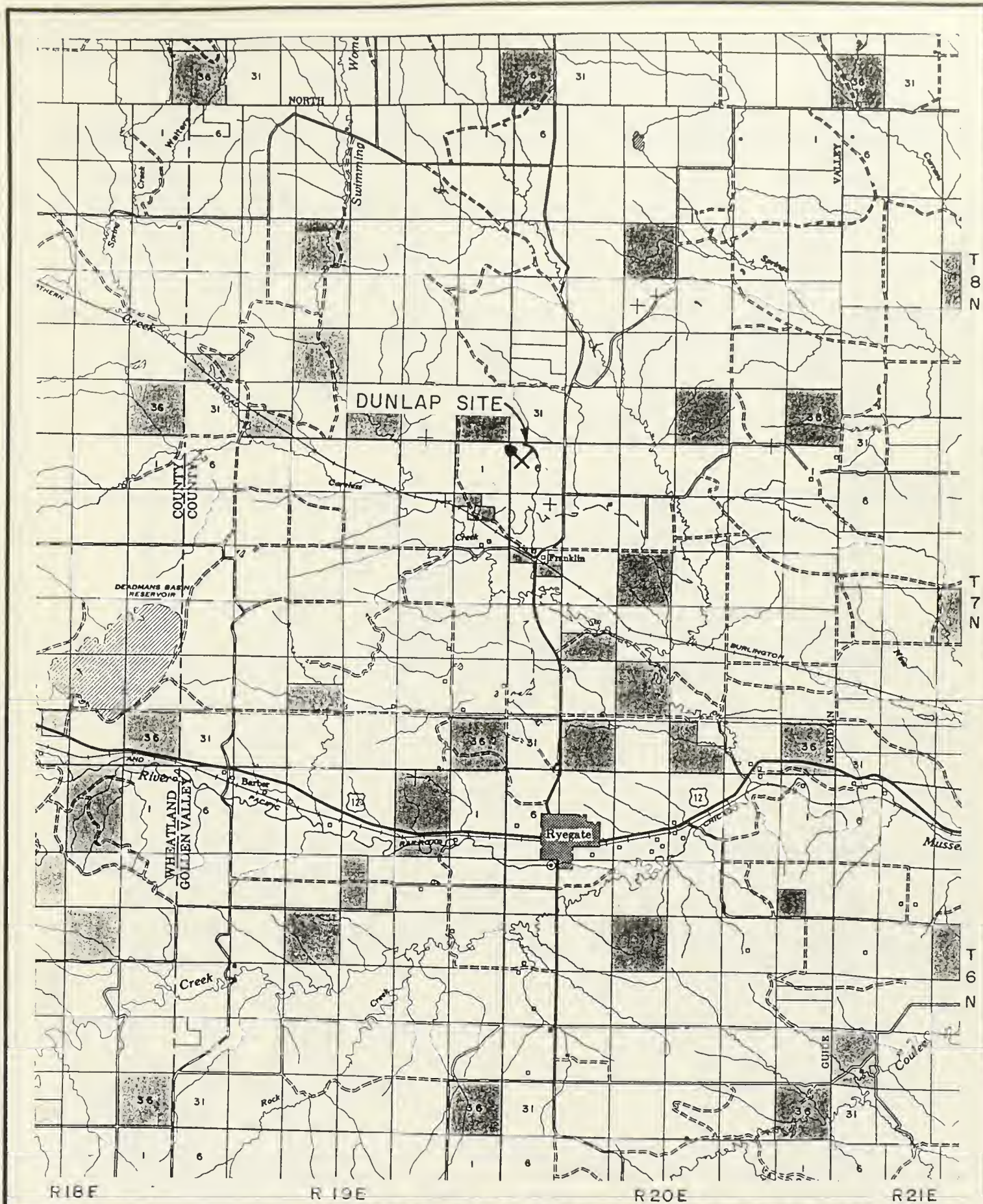












STATE OF MONTANA — DEPARTMENT OF STATE LANDS  
ABANDONED MINE RECLAMATION BUREAU — RECLAMATION DIVISION

VICINITY MAP

SITE DUNLAP

GOLDEN VALLEY COUNTY, MT; TOWNSHIP 7N RANGE 20E

SECTION(S) 6

MAP SCALE: 1" = 2.5 Miles









## CAMERON CREEK, SCHAFF, AND DUNLAP FINAL REPORT

### D. History

Historical Research Associates (HRA) from Missoula performed the historical inventory of the area. A summary of their report follows:

#### 1. CAMERON CREEK

The Cameron Creek project area lies within what was known historically as the Vipond Coal Field. The earliest reference to this field comes from a August 13, 1913 report written by Mineral Examiner Leroy A. Palmer and submitted to the Commissioner of the General Land Office in Washington, D.C. This report documents an examination of lands in T10N, R21E, the location of both the Cameron Creek and Schaff sites.

Apparently, Palmer's 1913 survey of the area was instigated, at least in part by John V. Vipond's application requesting classification of several parcels of land as coal lands (Minutes of Coal Board, October 13, 1913, Book 4, Vol. 22, Montana Coal Minutes 1913-1914 available at the BLM State Office Billings, Montana).

John Vipond came to the area north of Lavina in about 1910, made application for a homestead, and developed the coal in the immediate vicinity of his homestead property. The Coal Board Minutes and Mineral Examiner report state that by 1913:

... Vipond states that he has made improvements in the nature of opening up a coal mine in the NW 1/4 of SW 1/4 of Section 23, and he has a shaft 5 feet by 9 feet, and 45 feet deep, on the section line one fourth of a mile south of the quarter corner between Sections 22 and 23; ... that a certain 125-foot tunnel mentioned in his coal declaratory statement ... has been abandoned; that the coal is of good quality and that he has expended over \$3,000 in development work. By the time Palmer made his field survey, Vipond had already spent considerable time tracing the coal outcrop in the vicinity of Cameron Creek. Vipond provided Palmer with the locations of coal outcrops, which Palmer then used to determine the horizontal extent of the coal field.

Vipond made his entry in about March 1912 and sold 1800 tons during the first year. Hoisting was done by means of a windlass in wooden cars running on wooden rails. Acetylene lights were used as there were no occluded gases. The working face was 76 inches with the seam dipping 12°30' S31°W with the slope driven S30°E. The coal was sold to surrounding ranchers for domestic use. The coal in the Vipond slope had an analysis of 10.1% moisture, 14.5% ash, 0.8 sulfur, 10560 B.T.U. as received.





CAMERON CREEK, SCHAFF, AND DUNLAP  
FINAL REPORT

D. History (Cont.)

A document entitled, "Report of Reconnaissance between Musselshell River and Big Snowy Mountains in central Montana", dated December 12, 1914, indicates that Vipond's mine was still open in 1914, and provided coal to ranch families living as far as 10 miles away (Lester 1914). However, by 1921, Vipond's mine had been abandoned, and the only two mines operating in the Cameron Creek area were one by Gustafson and Johnson, and one by Elmer Darrel. It appears that Vipond's tenure as a coal miner in the Cameron Creek area lasted for less than a decade. According to Wesley Johnson whose brother Henry worked at the Vipond mine, a man was killed in the Vipond mine when the roof of the main entryway collapsed. This event may have caused Vipond to abandon the mine (Johnson 1987).

The first documented reference to the Darrel Mine comes from an August 3, 1921 report written by General Land Office (GLO) Mineral Examiner Robert Holley, and directed to the Commissioner of the GLO in Washington D.C. (Township/Range Reports, BLM, Billings Montana). Holley states that two mines were operating in the area during his July 1921 field visit - one of these by Elmer F. Darrel. The mine is described as follows:

The Darrel slope is located on patented homestead entry 016861 (the John Vipond homestead) and is driven on a 20 degree incline to the east cutting into the coal bed at a depth of 40 feet below the surface. Haulage is maintained by the use of wooden cars and a gasoline hoist. The coal is stored in a wooden bin having a capacity of 60 tons.

Holley examined a section of coal from the Darrel mine and stated that "there can be little profit in mining this deposit as it requires extra care in separating the coal from the included bone and clay and the value of the marketable product is in the labor put into it".

Unfortunately, there is no indication in Holley's report as to the length of operation of Darrel's coal mine. From Holley's description of the coal, it is likely that Darrel worked his mine to supply coal to a local market. According to Wesley Johnson, the mines in the Cameron Creek area were abandoned because the small mining ventures exhausted the coal in the seam.

The documentation regarding the Hjalmar Gustafson/Johnson mine also comes from the August 3, 1921 report written by Mineral Examiner Robert Holley. He states that the mine behind the current loadout structure (which apparently did not exist on 8/3/1921) was 75 feet long, had a strike of N30°W and a dip of 12° southwest on 5.5 feet of coal and clay. The coal was 30 feet below the surface at this site. The other adit was about 400 feet south of the first and the dip of the seam had decreased to 9.5°. No other mention was made of this adit except that it was referred to as the "old Gustafson slope" on a figure in the original report.



## CAMERON CREEK, SCHAFF, AND DUNLAP FINAL REPORT

### D. History (Cont.)

#### 2. SCHAFF

The parcel containing this site is part of the homestead entry of Russell E. Barrett, who obtained a patent to his property in September of 1917. The United States reserved the ditches and canals, but the ownership of underlying minerals went to Barrett along with the surface rights.

The current landowner, Nick Schaff, purchased the property in 1958. According to Schaff, the previous landowners (brothers named Henry, Edward and John Zeier) mined coal until they sold the property to him (Schaff 1987).

#### 3. DUNLAP

The Dunlap mine was worked between 1908 and the 1940's according to the land owner Mr. Edgar Dunlap. The incline No. 1 indicated on the site plans was worked 400-500 feet down slope at 26° and 400 feet each way. Three veins of coal were worked with a B.T.U. value of 11500 (Dunlap 1987).

The document entitled, "Report of Reconnaissance between Musselshell River and Big Snowy Mountains in central Montana", dated December 12, 1914, also mentions the Dunlap mine. In August of 1914 the report indicates that the mine appeared to be abandoned and the lower part of the slope was caved. The coal bed being mined was 44 inches thick and dips 27°S 70°E. The mine apparently started again by the 1930's (1933 license plate found on-site) and was worked into the 1940's by some Finnish people. They had an ice house and a Finnish bath house.

## II. DESCRIPTION OF RECLAMATION PROJECT

### A. Site Hazards and Problems

#### 1. CAMERON CREEK

The Vipond site is located on both sides of the Cameron Creek county road. The area on the east side of the road consists of 3 air shafts, 3 subsidence pits, a closed adit (Vipond) and related coal slack pile of which the adit and coal slack pile will not require action. The Vipond site which extends across the west side of the road consists of 3 subsidence areas, one coal slack pile and one previously closed adit (Cameron Creek OSM emergency backfill contract - 1987).

The Cameron Creek Loadout site has two coal slack piles, two adits and associated trenches, one air shaft, two subsidence pits and a large amount of debris including the remains of a loadout facility and scale house. All of the disturbance features mentioned are shown on the site plans.





**CAMERON CREEK, SCHAFF, AND DUNLAP  
FINAL REPORT**

**A. Site Hazards and Problems (Cont.)**

**2. SCHAFF**

The Schaff site is located on a slightly inclined slope 3/4 of a mile north of the Cameron Creek sites. This site consisted of an adit and associated adit trench with debris covering the adit. The debris consisted of a large pile of wood. A coal slack pile lies in front of the adit.

**3. DUNLAP**

The Dunlap site hazards included two subsidence pits, two houses (no action), 4 inclines, 4 coal slack areas, the southern most requiring no action at the landowners request. The area contained a large amount of debris including car bodies, wooden timbers, and concrete footings.

**B. Project Planning**

The scope of work for each of the projects was to: 1) eliminate all safety hazards by backfilling and/or restricting the entrance to all adits and shafts, 2) bury and/or neutralize all coal slack areas, 3) remove and/or stack all debris, 4) revegetate all disturbance areas.

The landowner at the Cameron Creek site did not want the Vipond adit coal slack pile revegetated. He wanted at least one coal slack pile left for placement on the roads in the winter.

The Dunlap site owner felt that the underground mine might one day be reopened. He emphatically rejected backfill as the closure method for 3 of the 4 adit declines. He agreed to allow the placement of steel grates cemented in the entrances of 3 adits and backfilling of 1 adit. He also requested that the ice house and Finnish bath house be left intact. In addition, the burnable wood and old cars parts were neatly piled per the owners request.

Mike Hiel was the AMR Bureau representative. Bill Maehl was the project engineer and Bill Wolff was the construction inspector for Spectrum Engineering.



CULTIVATED FIELD

VEHICLE TRAVEL WILL BE LIMITED  
TO ROUTES FLAGGED ON-SITE BY  
THE PROJECT ENGINEER.

CULTIVATED  
FIELD

USE AS BACKFILL  
MATERIAL

DARRELL  
COAL  
SLACK  
PILE

PREVIOUSLY  
RECLAIMED  
DARRELL  
ADIT

NEUTRALIZE  
BROADCAST SEED,  
FERTILIZE AND MULCH  
IN PLACE

CULTIVATED FIELD

DISPOSE  
OF  
CONCRETE

CULTIVATED FIELD

CUT 4 STRAND BARBED  
WIRE BETWEEN POSTS  
INSTALL SINGLE PANEL  
AND RETIGHTEN WIRE  
WHEN WORK IS COMPLETED

SEED, FERTILIZE  
AND MULCH

AS1

AS2

SALVAGE TOPSOIL, BACKFILL WITH  
COAL SLACK AND BORROW AREA  
MATERIAL, NEUTRALIZE AND  
REPLACE TOPSOIL

BORROW  
AREA

SP5A

SP5B

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

SP5

ADDITIONAL INFORMATION PERTAINING TO THIS  
SITE MAY EXIST IN THE DEPARTMENT OF STATE  
LANDS FILES OR AT SPECTRUM ENGINEERING'S  
OFFICE. THIS MATERIAL IS AVAILABLE FOR  
REVIEW BY ANY INTERESTED PARTY.

Vertical Datum Based On Interpretation Of  
USGS 7 1/2 Quadrangle, LAWRENCE HILL, SE  
Topography Prepared From Aerial Survey  
Conducted in 1967 By Spectrum Engineering  
Using A Plane Table And Altimeter. This  
Topography is Of Reconnaissance Class  
And Has Not Been Field Checked.



# LEGEND

- 4500' CONTOUR
- COAL SLACK PILE
- DRAINAGE
- AIR SHAFT (AS)  
NUMBER (0 DEPTH)
- PICTURE NUMBER  
AND ORIENTATION
- SUBSIDIARY PT (SP)  
NUMBER (0 DEPTH)
- OPEN ADIT
- CLOSED ADIT
- FENCE

LANDOWNER  
EV2 E1/2 SECTION 22, SECTION 23  
LEWIS RANCH, INC  
EDGAR LEWIS  
LAVINA, MT 59048  
PHONE (406) 575-4447  
or 538-8622

NOTE:  
WORK DESCRIPTION AND  
WORK SUMMARY TABLE  
FOUND ON SHEET 3 OF 3

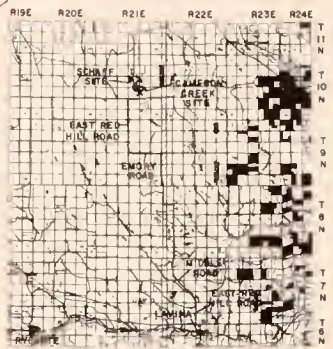
## NOTICE

AN ABANDONED COAL MINE UNDERLIES THIS SITE.  
MANY POTENTIAL HAZARDS EXIST. THE EXTENT  
OF THESE HAZARDS IS NOT FULLY KNOWN.  
CONTRACTORS AND OTHER PERSONS WORKING AT  
THE SITE SHALL APPRISE THEMSELVES OF THE  
CONDITIONS AND TAKE WHATEVER STEPS ARE  
DEEMED NECESSARY TO INSURE SAFETY WHILE  
PERFORMING THEIR DUTIES.

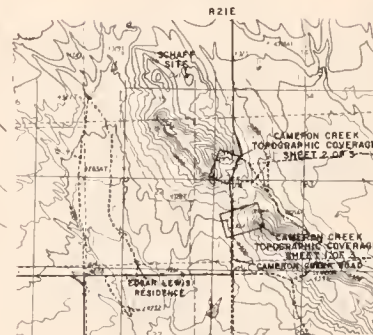


CAMERON  
CREEK  
SITE

STATE LOCATION MAP



VICINITY ACCESS MAP



SITE LOCATION MAP

## SITE PLAN AND GENERAL LAYOUT

CAMERON CREEK - VIPOND SITE  
SECTIONS 22 AND 23, T10N, R21E  
GOLDEN VALLEY COUNTY, MONTANA

STATE OF MONTANA  
DEPARTMENT OF STATE LANDS  
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SHEET 2 OF 3  
DRAWN BY: CT  
CHECKED BY: CT  
APPROVED BY: CT  
REVISIONS  
DATE BY

SPECTRUM ENGINEERING  
Mining and Civil Engineers

3508 N. AVE. NORTH  
BILLINGS, MONTANA

SHEET NO. 1 OF 3



VEHICLE TRAVEL WILL BE LIMITED TO ROUTES FLAGGED ON-SITE BY THE PROJECT ENGINEER.

SEED, FERTILIZE AND MULCH AS 4

WASTE DUMP

USE AS FILL FOR AS 4

SUBSIDENCE AREA

SP 6

SEED, FERTILIZE AND MULCH

DISPOSE OF OEBRIS, SALVAGE TOPSOIL, BACKFILL AOIT, AOIT TRENCH, SUBSIDENCE PITS, AND AIR SHAFT WITH COAL SLACK MATERIAL, NEUTRALIZE AND REPLACE TOPSOIL

SP

GUSTAFSON/JOHNSON AOIT

COAL SLACK PILE AND AREA

INSTALL OWNER PROVIDED WARNING SIGN

NEUTRALIZE COAL SLACK PILE AND AREA

ACCESS ROAD

0.4 MILES TO CAMERON CREEK V-POND SITE

SALVAGE TOPSOIL, BACKFILL WITH COAL SLACK MATERIAL, NEUTRALIZE AND REPLACE TOPSOIL

AOIT OPEN AT BACK OF SUBSIDENCE AREA

TABLE AOIT

DISPOSE OF OEBRIS

LOADOUT BIN

WEIGHT SCALES

TIPPLE COAL SLACK PILE

DISSEMINATION AREA

SEED, FERTILIZE AND MULCH

COVER ENTIRE PILE OF MATERIAL FROM AREA AND NEUTRALIZE

NEUTRALIZE COAL SLACK PILE

1.2 MILES TO SCAFF SITE

CAMERON CREEK COUNTY ROAD

0.4 MILES TO CAMERON CREEK V-POND SITE

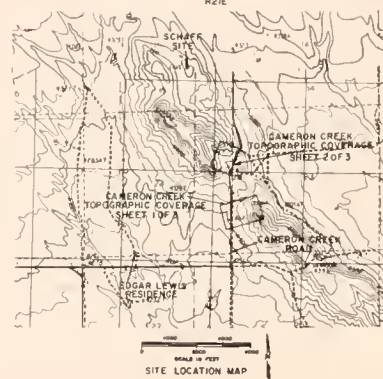
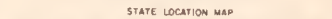
ADDITIONAL INFORMATION PERTAINING TO THIS SITE MAY EXIST IN THE DEPARTMENT OF STATE LANDS FILES OR AT SPECTRUM ENGINEERING'S OFFICE. THIS MATERIAL IS AVAILABLE FOR REVIEW BY ANY INTERESTED PARTY.

Vertical  
USGS  
Topog  
Contour  
Utility  
Topog  
And H

LANDOWNER  
E $\frac{1}{2}$ E $\frac{1}{2}$  OF SECTION 22  
AND SECTION 23  
LEWIS RANCH, INC.  
EDGAR LEWIS  
LAVINA, MT 59046  
PHONE: (406) 375-4447  
or 538-8622

- A380	CONTOUR	① →	PICTURE NUMBER AND ORIENTATION
	COAL SLACK PILE	SP 7	SUBSIDIENCE PIT (SP NUMBER (S DEPTH))
-	DRAINAGE		OPEN ADIT
	4th SHAFT (AS) NUMBER (S DEPTH)		CLOSED ADIT

AN ABANDONED COAL MINE UNDERLIES THIS SITE. MANY POTENTIAL HAZARDS EXIST. THE EXTENT OF THESE HAZARDS IS NOT FULLY KNOWN. CONTRACTORS AND OTHER PERSONS WORKING AT THE SITE SHALL APPRISE THEMSELVES OF THE CONDITIONS AND TAKE WHATEVER STEPS ARE DEEMED NECESSARY TO INSURE SAFETY WHILE PERFORMING THEIR DUTIES.



SITE PLAN AND GENERAL LAYOUT

**CAMERON CREEK - LOADOUT SITE**  
SECTIONS 22 E AND 23, T10N, R12E  
GOLDEN VALLEY COUNTY, MONTANA

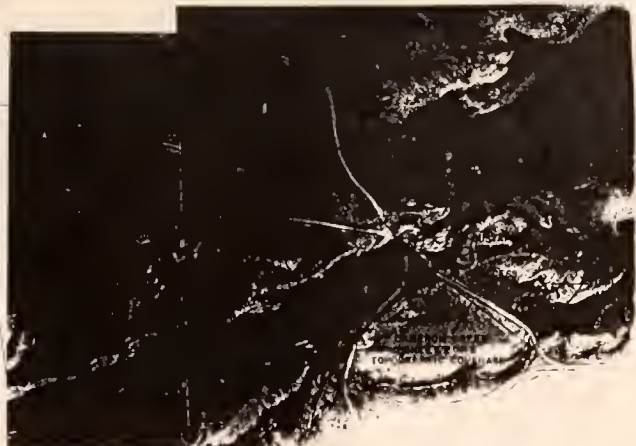
STATE OF MONTANA  
DEPARTMENT OF STATE LANDS  
ADJUDICATED MINING RECLAMATION BUREAU, RECLAMATION DIVISION

DATE: 12-28-87		<b>SPECTRUM ENGINEERING</b>  Mining and Civil Engineers  800 E. 4th AVE. NORTH BILLINGS, MONTANA
DRAWN BY:	LNR	
DESIGNED BY:		
CHECKED BY:		
REVIEWER:		
NO.	DATE	BY

SHEET NO. 2 OF 3



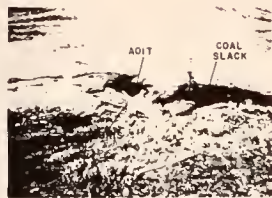




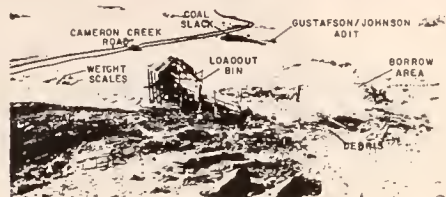
1 PICTURE 1 SHOWS THE ENTIRE CAMERON CREEK SITE AND THE TOPOGRAPHIC COVERAGE FOR SHEETS 1 OF 3 AND 2 OF 3



2 PICTURE 2 SHOWS THE COAL SLACK PILE BY THE DARRELL ADIT



3 PICTURE 3 SHOWS THE GUSTAFSON/JOHNSON ADIT



4 PICTURE 4 SHOWS THE LOADOUT BIN, COAL SLACK, BORROW AREA AND SCATTERED DEBRIS



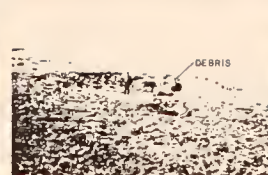
5 PICTURE 5 SHOWS THE TIPPLE ADIT, SUBSIDENCE, ASSOCIATED DEBRIS, AND LOADOUT BIN



6 PICTURE 6 SHOWS THE LOADOUT BIN



7 PICTURE 7 SHOWS SUBSIDENCE PIT 1 AND ITS ASSOCIATED DEBRIS



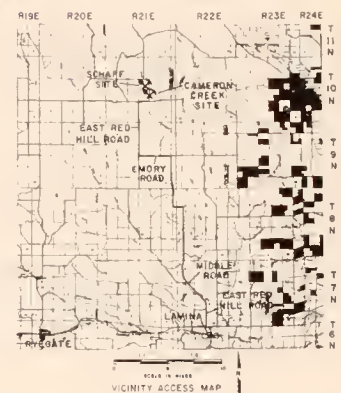
8 PICTURE 8 SHOWS SUBSIDENCE PIT 6



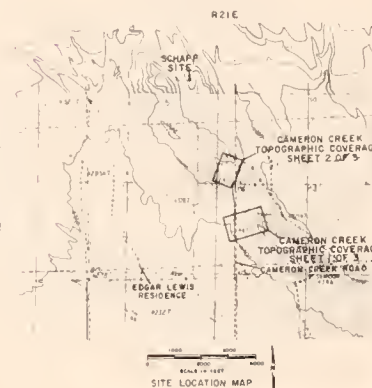
9 PICTURE 9 SHOWS AIR SHAFT 4 AND THE SMALL WASTE PILE



STATE LOCATION MAP



VICINITY ACCESS MAP



SITE LOCATION MAP

# WORK DESCRIPTION VIPOND SITE - SHEET 1 OF 3

- SALVAGE AND STOCKPILE TOPSOIL FROM THE SINK HOLES (SUBSIDENCE PITS AND AIR SHAFTS)
- DISPOSE OF DEBRIS
- BACKFILL THE SINK HOLES (AIR SHAFT 2, 3, SUBSIDENCE PITS 2, 3 AND 5) WITH MATERIAL FROM THE DARRELL COAL SLACK PILE AND REGRADE THE BACKFILLED AREAS
- CUT A STRAND BARE WIRE FENCE BETWEEN STEEL POSTS FOR ACCESS TO DARRELL COAL SLACK PILE AND SP-5 (FROM WORK COMPLETION INSTALL ONE SINGLE PANEL BETWEEN POSTS AND TIGHTEN HARD WIRE
- PROVIDE WATER FOR BACKFILL COMPACTION AND HAUL ROAD DUST SUPPRESSION
- NEUTRALIZE ALL COAL SLACK AREAS AND THE REMAINING DARRELL COAL SLACK PILE
- REPLACE THE TOPSOIL AND REVEGETATE THE DISTURBED AREAS (BACKFILLED SINK HOLES AND DARRELL COAL SLACK PILE)
- ADDITIONAL WORK DESCRIPTION DETAILS CAN BE FOUND IN THE SPECIAL PROVISIONS

# WORK DESCRIPTION LOADOUT AREA - SHEET 2 OF 3

- SALVAGE AND STOCKPILE TOPSOIL FROM THE SINK HOLES (SUBSIDENCE PITS AND AIR SHAFTS)
- DISPOSE OF DEBRIS
- BACKFILL THE SINK HOLES (AIR SHAFT 4, SUBSIDENCE PITS 6 AND 7 AND THE TIPPLE ADIT) WITH MATERIAL FROM THE GUSTAFSON/JOHNSON COAL SLACK PILE
- PROVIDE WATER FOR BACKFILL COMPACTION AND HAUL ROAD DUST SUPPRESSION
- NEUTRALIZE ALL COAL SLACK AREAS AND PILES
- COVER THE TIPPLE COAL SLACK PILE WITH THREE (3) INCHES OF MATERIAL FROM THE BORROW AREA
- REPLACE THE TOPSOIL AND REVEGETATE THE DISTURBED AREAS
- ADDITIONAL WORK DESCRIPTION DETAILS CAN BE FOUND IN THE SPECIAL PROVISIONS

# WORK SUMMARY TABLE VIPOND SITE - SHEET 1 OF 3 AND LOADOUT AREA - SHEET 2 OF 3

ITEM	DESCRIPTION	ACTION	QUANTITY
SP-1	16' x 17' x 3' DEEP	BACKFILL	20 LCY
SP-2	13' x 25' x 3' DEEP	BACKFILL	10 LCY
SP-3	10' x 20' x 3' DEEP	BACKFILL	15 LCY
SP-4	21' x 76' x 1' DEEP	NO ACTION	N/A
SP-5	27' x 38' x 5' DEEP	BACKFILL	140 LCY
SP-5A	5' x 5' x 8' DEEP	BACKFILL	1 LCY
SP-5B	5' x 5' x 8' DEEP	BACKFILL	1 LCY
SP-6	14' x 23' x 4' DEEP	BACKFILL	30 LCY
SP-7	23' x 13' x 3' DEEP	BACKFILL	10 LCY
SP-8	42' x 42' x 4' DEEP	NO ACTION	N/A
AS-1	10' x 10' x 3' DEEP	BACKFILL	5 LCY
AS-2	15' x 18' x 3' DEEP	BACKFILL	20 LCY
AS-3	12' x 12' x 3' DEEP	BACKFILL	15 LCY
AS-4	16' x 19' x 3' DEEP	BACKFILL	30 LCY
GUSTAFSON/JOHNSON ADIT	14' x 30' x 4' DEEP	BACKFILL	55 LCY
TIPPLE ADIT	9' x 85' x 3' DEEP	BACKFILL	120 LCY
TIPPLE SLACK PILE	0.74 ACRES	COVER 3" DEEP WITH MATERIAL FROM BORROW AREA	100 LCY
SALVAGE TOPSOIL	FROM SUBSIDENCE AREAS	STOCKPILE ADJACENT TO SUBSIDENCE AREAS	40 LCY
DEBRIS	RIDECAPABLE - WOOD NON-BIDECAPABLE - METAL	DISPOSE OF DEBRIS	40 PICKUP LOADS 20 PICKUP LOADS
WATER	SUBSIDENCE BACKFILL AREAS HAUL ROADS TOTAL	FOR COMPACTION DUST SUPPRESSION	5000 GALLONS 5000 GALLONS 10000 GALLONS
FARM FENCE	SINGLE PANEL	INSTALL PER SPECS	1 PANEL
NEUTRALIZE	0.62 ACRES	100% CALCIUM CARBONATE APPLICATION (17 TONS/ACRE/6" SLICE)	10 TONS
VEGETATION OF ENTIRE DISTURBANCE AREA - 2.2 ACRES	SEED APPLICATION (137 LBS PICKUP/ACRE) 51 LBS PLS	FERTILIZER APPLICATION (192 LBS NUTRIENT/ACRE) 204 LBS	MULCH APPLICATION (1500 LBS/ACRE) 6600 LBS

## NOTICE

AN ABANDONED COAL MINE UNDERLIES THIS SITE. MANY POTENTIAL HAZARDS EXIST. THE EXTENT OF THESE HAZARDS IS NOT FULLY KNOWN. CONTRACTORS AND OTHER PERSONS WORKING AT THE SITE SHALL APPRISE THEMSELVES OF THE CONDITIONS AND TAKE WHATEVER STEPS ARE DEEMED NECESSARY TO INSURE SAFETY WHILE PERFORMING THEIR DUTIES.

## SITE PLAN AND GENERAL LAYOUT

## CAMERON CREEK SITES SECTIONS 22 AND 23, T10N, R21E GOLDEN VALLEY COUNTY, MONTANA

STATE OF MONTANA  
DEPARTMENT OF STATE LANDS  
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

## SPECTRUM ENGINEERING

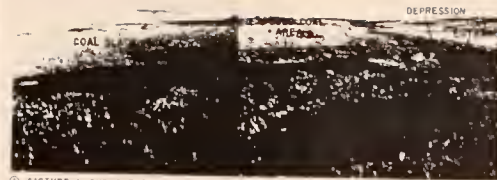
Mining and Civil Engineers

3508 4th AVE NORTH  
BILLINGS, MONTANA

DATE 12-28-07  
DRAWN BY CT  
CHECKED BY  
APPROVED BY  
NO. SECTION NO.



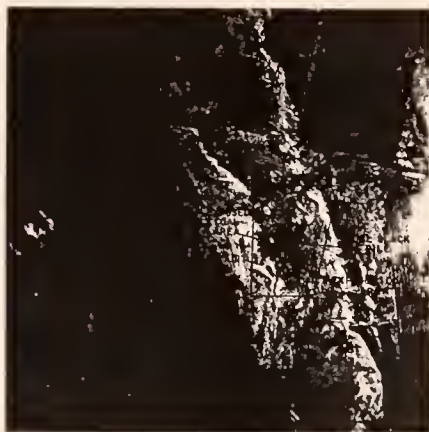




PICTURE 1 SHOWS THE COAL SLACK PILE, EXPOSED COAL AREAS AND THE ADIT ENTRANCE



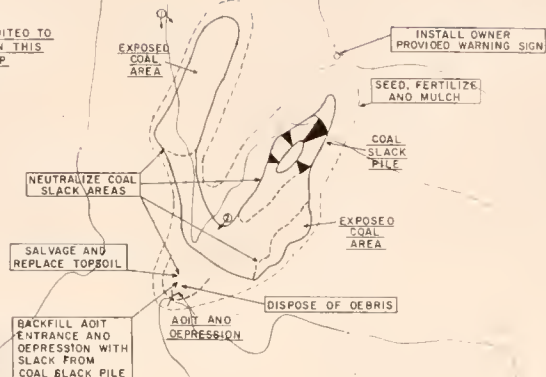
PICTURE 2 SHOWS THE ADIT ENTRANCE WHICH IS COVERED BY WOOD DEBRIS



PICTURE 3 IS AN AERIAL SHOWING THE PROJECT AREA AND TOPOGRAPHIC COVERAGE

VEHICLE TRAVEL WILL BE LIMITED TO ROUTES FLAGGED ON-SITE BY THE PROJECT ENGINEER.

CONSTRUCTION IS LIMITED TO THE AREA SHOWN ON THIS TOPOGRAPHIC MAP.



ADDITIONAL INFORMATION PERTAINING TO THIS SITE MAY EXIST IN THE DEPARTMENT OF STATE LANDS FILES OR AT SPECTRUM ENGINEERING'S OFFICE. THIS MATERIAL IS AVAILABLE FOR REVIEW BY ANY INTERESTED PARTY.



WORK SUMMARY TABLE

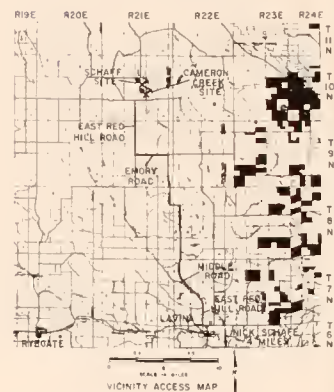
ITEM	DESCRIPTION	ACTION	QUANTITY
TOPSOIL	STRIP FROM ADIT DEPRESSION PRIOR TO BACKFILLING	STOCKPILE JUST OUTSIDE DEPRESSION	15 CY
DEBRIS	BIODEGRADABLE - WOOD	DISPOSE OF DEBRIS	6 RICHUR LOADS
ADIT ENTRANCE AND DEPRESSION	UP TO 29 FEET ACROSS, UP TO 8 FEET DEEP	BACKFILL WITH SLACK FROM COAL SLACK PILE	150 CY
WATER	ADIT ENTRANCE & DEPRESSION	FOR COMPACTION	1500 GALLONS
	HAUL ROADS	DUST SUPPRESSION	1500 GALLONS
	TOTAL		3000 GALLONS
NEUTRALIZE - 0.22 ACRES	COAL SLACK AREAS AND BACKFILLED ADIT DEPRESSION	100 % CALCIUM CARBONATE APPLICATION (17 TONS/ACRE/IN SLEEVE)	3.7 TONS
REVEGETATION OF ENTIRE DISTURBANCE AREA - 0.44 ACRES	SEED APPLICATION (25 LBS/ACRE) 10.2 LBS/AC	FERTILIZER APPLICATION (82.5 LBS NUTRIENT/ACRE) 41 LBS	MULCH APPLICATION (3000 LBS/ACRE) 1320 LBS



LANDOWNER  
W 1/2 SE 1/4 OF SECTION 15,  
T10N, R21E  
NICK AND GRACE SCHAFF  
408 SE BENCH ROAD  
4 MILES SOUTHEAST OF  
LAVINA, MT 59046  
PHONE (406) 636-4676

#### NOTICE

AN ABANDONED COAL MINE UNDERLIES THIS SITE. MANY POTENTIAL HAZARDS EXIST. THE EXTENT OF THESE HAZARDS IS NOT FULLY KNOWN. CONTRACTORS AND OTHER PERSONS WORKING AT THE SITE SHALL APPRISE THEMSELVES OF THE CONDITIONS AND TAKE WHATEVER STEPS ARE DEEMED NECESSARY TO INSURE SAFETY WHILE PERFORMING THEIR DUTIES.



#### SITE PLAN AND GENERAL LAYOUT

SCHAFF SITE  
SECTION 15, T10N, R21E  
GOLDEN VALLEY COUNTY, MONTANA

STATE OF MONTANA  
DEPARTMENT OF STATE LANDS  
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

DATE: 7-28-97  
DRAWN BY: [ ]  
CHECKED BY: [ ]  
APPROVED BY: [ ]  
REVISION: [ ]

SPECTRUM ENGINEERING  
Mining and Civil Engineers  
5302 4th AVE NORTH  
BILLINGS, MONTANA

SHEET NO. 1 OF 1



ADDITIONAL INFORMATION PERTAINING TO THIS SITE MAY EXIST IN THE DEPARTMENT OF STATE LANDS FILES OR AT SPECTRUM ENGINEERING'S OFFICE. THIS MATERIAL IS AVAILABLE FOR REVIEW BY ANY INTERESTED PARTY.

Revised Datum Based On Interpretation Of USGS 7.5' Quadrangle, WILLIAM Township, Prepared From Ground Survey Conducted In 1987 By Spectrum Engineering Using A Price Table And Survey. The Elevation Is Of Representative Class And Not A Best-Fit Class.

CONSTRUCTION IS LIMITED TO THE AREA SHOWN ON THIS TOPOGRAPHIC MAP

VEHICLE TRAVEL WILL BE LIMITED TO ROUTES FLAGGED ON-SITE BY THE PROJECT ENGINEER.

WORK SUMMARY TABLE

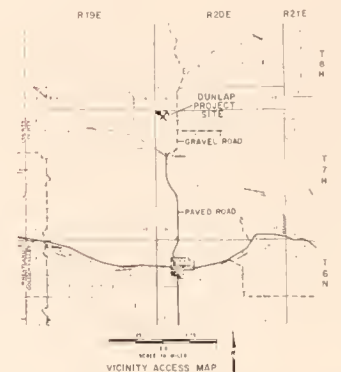
ITEM	DESCRIPTION	ACTION	QUANTITY
SUBSIDENCE PIT 1	11' x 15' x 6' DEEP	BACKFILL WITH MATERIAL FROM INCLINE 1 SLACK PILE	35 CY
SUBSIDENCE PIT 2	5' x 7' x 1.5' DEEP	BACKFILL WITH MATERIAL FROM INCLINE 1 BORROW AREA	2 CY
CISTERN	6' x 8' x 12' DEEP	BACKFILL WITH MATERIAL FROM INCLINE 1 BORROW AREA	25 CY
INCLINE 1 AND TRENCH IN FRONT	15' x 15' x 4' UP TO 9' D	BACKFILL WITH MATERIAL FROM INCLINE 1 SLACK PILE	45 CY
INCLINE 2	5' x 1' x 5' W	INSTALL STEEL GRADE IN THE ENTRANCE	3 GRATES
INCLINE 3	5' x 2' x 5' W	INSTALL STEEL GRADE IN THE ENTRANCE	3 GRATES
INCLINE 4	9' x 1' x 5' W	INSTALL STEEL GRADE IN THE ENTRANCE	3 GRATES
DEBRIS	BIODEGRADABLE - WOOD	USABLE - PILE NEXT TO CAR BODIES	30 RICKUP LOADS
	NON-BIODEGRADABLE - METAL, CONCRETE AND CAR BODIES AND PARTS	NON-USABLE - DISPOSE OF IN SP1	20 RICKUP LOADS
WATER	HAUL BODIES	FOR COMPACTION	1000 GALLONS
		DUST SUPPRESSION	1000 GALLONS
		TOTAL	8500 GALLONS
NEUTRALIZE - 0.7 ACRES	SP 1, INCLINE 1, PILE 2 COAL SLACK AREAS IN FRONT OF INCLINE 3	100% CALCEM - CARBONATE APPLICATION 110 TONS/ACRE/IN" SLICE	12.6 TONS
REVEGETATION OF ENTIRE DISTURBANCE AREA - 0.7 ACRES		SEED APPLICATION 723 LBS. PLS/ACRE (127 LBS. LOST TO WIND) FERTILIZER APPLICATION 16 LBS. PLS/ACRE	MULCH APPLICATION 2100 LBS

# WORK DESCRIPTION

- BACKFILL INCLINE 1 AND SUBSIDENCE PIT 1 WITH MATERIAL FROM THE COAL SLACK PILE. REGRADE THE BACKFILLED AREA.
- BACKFILL SUBSIDENCE PIT 2 AND THE CISTERN WITH MATERIAL FROM THE BORROW AREA NEAR INCLINE E. REGRADE THE BACKFILLED AREA.
- REGRADE INCLINE 1 COAL SLACK PILE. NEUTRALIZE THIS AREA AND THE OTHER 2 SMALL COAL SLACK AREAS WITH CALCEM CARBONATE (LIME) AND REVEGETATE ALL DISTURBED AREAS.
- INSTALL STEEL GRATES IN THE ENTRANCE OF INCLINE 1, 3 AND 4.
- DISPOSE OF DEBRIS (GLASS, CANS, NON-USABLE AND NON-BURNABLE WOOD). THE LANDOWNER WANTS THE GOOD WOOD PILED NEAR TO THE CAR BODIES WHICH ARE TO BE PILED TOGETHER.
- PROVIDE WATER FOR BACKFILL COMPACTION AND HAUL ROAD DUST SUPPRESSION.
- ADDITIONAL WORK DESCRIPTION DETAILS CAN BE FOUND IN THE SPECIAL PROVISIONS.

## NOTICE

AN ABANDONED COAL MINE UNDERLIES THIS SITE. MANY POTENTIAL HAZARDS EXIST. THE EXTENT OF THESE HAZARDS IS NOT FULLY KNOWN. CONTRACTORS AND OTHER PERSONS WORKING AT THE SITE SHALL APPRISE THEMSELVES OF THE CONDITIONS AND TAKE WHATEVER STEPS ARE DEEMED NECESSARY TO INSURE SAFETY WHILE PERFORMING THEIR DUTIES.



## SITE PLAN AND GENERAL LAYOUT

DUNLAP SITE  
SECTION 6, T7N, R2E  
GOLDEN VALLEY COUNTY, MT

STATE OF MONTANA  
DEPARTMENT OF STATE LANDS  
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

DATE 12-28-87

DRAWN BY CT

CHECKED BY

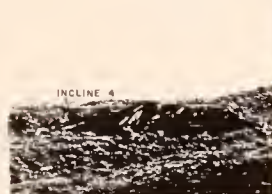
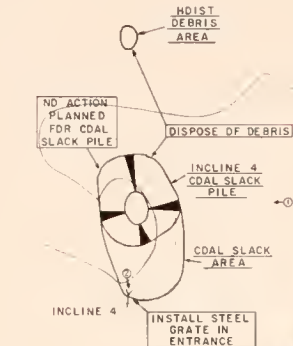
APPROVED BY

DATE

SPECTRUM ENGINEERING  
Mining and Civil Engineers

3000 8th Ave. North  
Billings, Montana

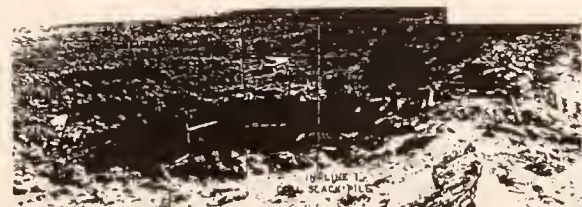
SHEET NO. 1 of 1



1. PICTURE 1 SHOWS THE COAL SLACK PILE BY INCLINE 4 WITH THE WOOD DEBRIS



2. PICTURE 2 SHOWS THE OPENING TO INCLINE 4 INSTALL A GRATE IN THE ENTRANCE



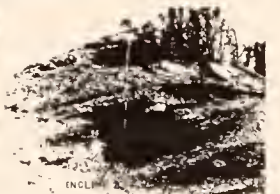
3. PICTURE 3 SHOWS INCLINES 1, 2 AND 3, THE OLD CABIN REMAINS, THE COAL SLACK AREAS, AND THE SCATTERED DEBRIS



4. PICTURE 4 SHOWS INCLINE 3 INSTALL A GRATE IN THE ENTRANCE



5. PICTURE 5 SHOWS INCLINE 2 INSTALL A GRATE IN THE ENTRANCE



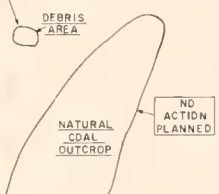
6. PICTURE 6 SHOWS INCLINE 1 INSTALL A GRATE IN THE ENTRANCE



7. PICTURE 7 SHOWS AN OLD FINNISH BATH HOUSE AND ICE HOUSE. THESE WILL REMAIN INTACT



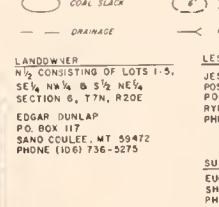
8. PICTURE 8 SHOWS SCATTERED CAR PARTS. THESE ARE TO BE GATHERED AND PILED TOGETHER



NATURAL COAL OUTCROP



DEBRIS AREA



NO ACTION PLANNED

LANDOWNER  
N/4 CONSISTING OF LOTS 1-5,  
SE 1/4 NW 1/4 & S 1/4 NE 1/4  
SECTION 6, T7N, R2E  
EDGAR DUNLAP  
P.O. BOX 117  
SAND COULEE, MT 59472  
PHONE (106) 736-5275

LESSEE  
JESSIE ZEIER (SISTER)  
POSTMISTRESS - RYEGATE  
P.O. BOX 83  
RYEGATE, MT 59074  
PHONE (406) 568-2255 HOME  
(406) 568-2362 WORK

SUBLESSEE  
EUGENE TABER  
SHAWMUT, MT 59078  
PHONE (406) 632-4169





CAMERON CREEK, SCHAFF, AND DUNLAP  
FINAL REPORT

C. Chronological History

1. The projects were advertized for the three consecutive weeks of October 27th, November 3rd and 10th, 1988 in the Billings Gazette in Billings, Independent Record in Helena, and the Great Falls Tribune in Great Falls.
2. The pre-bid conference was held at 10 a.m. on Friday, November 4th, 1988. The meeting started at the weigh station at the intersection of Highway 3 and Highway 12 just north of Lavina. All three project sites were also visited by the contractors accompanied by Mike Hiel from the AMR Bureau and Bill Maehl from Spectrum Engineering.
3. Bid were opened at 2 p.m. on November 17th, 1988. The bid tabulation and engineer's estimate are presented in Appendix D at the back of this report.
4. The Notice of Award was issued on December 1st, 1988 to the lowest bidder in the amount of \$17,825.00. The Agreement was signed and the Contract was awarded on December 14th, 1988 to:

Tandy Construction  
Star Route, P.O. Box 1057  
Roberts, Montana 59070  
Phone: 406/445-2363  
MT Contractor's License: 2603 B

5. The pre-construction meeting was held at the Dunlap site on December 12th, 1988. Jim Tandy and Roly DeVries (the partners in Tandy Construction) and Bill Maehl (project engineer) and Bill Wolff (construction inspector) from Spectrum Engineering were in attendance. Both Jim and Roly will be the contractor's superintendents. Work began after the meeting. The pre-construction meeting for Cameron Creek and Schaff was held on December 21st. Mike Hiel from the AMR Bureau and Bill Maehl met the contractor and construction inspector at the Dunlap site and conducted a walk-thru. All work including the revegetation had been completed except for placement of the grates in the entrance of the three adit inclines. The contractor, AMR representative and Spectrum then motored to Cameron Creek and Schaff where a project walk-thru was completed. The placement of hazard signs at Cameron Creek and Schaff was eliminated.
6. The sixty day contract time started December 12th, 1988 per the Notice To Proceed.
7. All of the earthwork and revegetation was completed at the Dunlap site on December 21st, 1988. The 3 adit grates were installed on January 30th, 1989 thus completing all work items at Dunlap.



CAMERON CREEK, SCHAFF, AND DUNLAP  
FINAL REPORT

C. Chronological History (Cont.)

8. A temporary verbal winter shut-down was issued on December 22nd, 1988 until December 27, 1988. Forms were dug for installing the grates on December 28th and the project was shut-down again from the 29th until January 30, 1989. Dunlap was completed on January 30th and the equipment was moved to Cameron Creek.
9. Work resumed at the Cameron Creek site on January 31st for 1/2 day until cold weather forced another winter shut-down.
10. The Cameron Creek and Schaff sites were started again on April 4th, 1989 and completed on April 15th, 1989. The Contractor completed the project in 18 working days and used 25 contract days of the 60 day contract.
11. Final inspection took place on May 8th, 1989 with Ben Mundie from the AMR Bureau and Bill Maehl from Spectrum Engineering.

D. Equipment

1. Case 580 (60 HP) backhoe
2. International Harvester TD8E (80 HP) dozer
3. Ford 9000 (318 HP) 14 cubic yard dump truck
4. Water tank in dump truck (500 gallon)
5. John Deere 4020 (100 HP) farm tractor
6. John Deere 10 foot disk
7. Brillion 10 foot seed drill
8. Homemade crimper





CAMERON CREEK, SCHAFF, AND DUNLAP  
FINAL REPORT

E. Daily Construction Log

Jim Tandy and Roly Devries, the partners in Tandy Construction, served as the Contractor's on-site superintendent. Bill Wolff served as Spectrum's construction inspector. The construction of the project was completed by site area as follows:

DUNLAP

- Dec. 12, 1988 - Held pre-construction meeting and started debris cleanup.
- Dec. 13, 1988 - Continue debris cleanup.
- Dec. 14, 1988 - Started burning in burn pit. Landowner visited the site for 20 minutes. He seemed satisfied with the work. Incline 1 was backfilled. Debris was burned for 12 hours, water was added to burn pit and then pit was covered.
- Dec. 19, 1988 - Picked rocks from revegetation areas. Installed hazard sign. Disk in lime into neutralization areas.
- Dec. 20, 1988 - Seeding, fertilizing all disturbance areas. Begin crimping in the straw mulch.
- Dec. 21, 1988 - Finished crimping in the last 10 bales of mulch.
- Dec. 28, 1988 - Started digging the holes for placement of the adit grates. Winter weather forced a work shut-down.
- Jan. 30, 1989 - Completed digging holes, set forms and set adit grates. Concrete was mixed in front end loader bucket. Straw, then 1 foot of dirt, then a second layer of straw was placed over the concrete to keep it from freezing. Work at Dunlap site is totally complete.
- Apr. 4, 1989 - Inspector visits Dunlap to check on mulch and how grates look. Incline 2 grate has 1/2 inch play at top.
- Apr. 14, 1989 - Contractor digs out dirt and checks concrete around Incline grate 2. Concrete is sound but because footings are in coal there was a little play. This was fixed by tamping around grate until no further play is possible.

CAMERON CREEK

- Jan. 31, 1989 - Moved to Cameron Creek. Started digging burn pit behind the loadout structure. Temperature dropped 25 degrees in 1 hour and had to shut-down for remainder of winter.
- Apr. 4, 1989 - Flagged off the loadout structure due to lack of SHPO sign-off. This structure will not be disturbed. Contractor picking up debris around loadout site.



**CAMERON CREEK, SCHAFF, AND DUNLAP  
FINAL REPORT**

**E. Daily Construction Log (Cont.)**

**CAMERON CREEK**

- Apr. 5, 1989 - Sheriff said no burning permits were necessary in this type of weather. Dozer working on tipple coal slack. Backhoe cleaning out tipple adit trench, Johnson adit entrance, SP-6, SP-8 and AS-4.
- Apr. 10, 1989 - Backfilling subsidence areas with coal slack. Backfilled scale house depression with dirt from borrow area. Landowner wants contractor to dig him a garbage pit.
- Apr. 11, 1989 - Remove topsoil from SP-7 and started filling Johnson adit. Spent most of day repairing backhoe.
- Apr. 12, 1989 - Placing topsoil on SP-1, hauling borrow to top of tipple coal slack, all slack areas were limed, fertilized, disk, seeded and mulched. Fertilize, seed and mulch Johnson adit and coal slack area, SP-6, SP-7 and AS-4.
- Apr. 13, 1989 - Finish backfilling tipple adit and trench. Fertilize, seed, fertilize and mulch. All of loadout area complete. Backfilling SP-1, SP-2 and SP-3. Backfill, fertilize, seed and mulch AS-1, 2 and 3, SP-5A and SP-5B, backfill SP-5 and apply lime and topsoil. Lime, fertilize, seed and mulch the remainder of the Darrel coal slack pile.
- Apr. 14, 1989 - Completed backfilling SP-1. Fertilize, seed and mulch SP-1, SP-2, SP-3, and SP-5, crimping AS-1, AS-2, AS-3 and SP-5A, SP-5B and SP-5. Topsoil on SP-5 was moist and started to ball slightly. Vipond site complete.
- Apr. 15, 1989 - Remulched SP-5 and repaired landowner's fence. Used splice kit at landowner request in place of single panel.

**SCHAFF**

- Apr. 4, 1989 - Picking up wood pile covering the adit and hauled all wood debris to Cameron Creek site to be burned.
- Apr. 5, 1989 - Backfilled Schaff adit and trench in front of the adit with coal slack. Lime was spread on western coal slack area. Schaff site is situated on the coal outcrop with no topsoil available. The plans called for salvaging 15 yards of material which looked like it was carried in and deposited by the wind. Upon starting to dig, this was only surface veneer and could not be salvaged without mixing with coal material. Therefore no topsoil was salvaged at this site.
- Apr. 10, 1989 - Spread lime over all remaining slack areas. Entire area was fertilized, seeded and mulched.



CAMERON CREEK, SCHAFF, AND DUNLAP  
FINAL REPORT

III. SLIDES

The description of the slides taken to document the work performed at each of the sites is found in Appendix A. In addition, the original slides are found at the very back of one volume and black and white copies of the slides are found in all three volumes directly behind the slide descriptions in Appendix A.

Two prints showing views of the reclamation work are found on the following page.





CAMERON CREEK, SCHAFF, AND DUNLAP  
FINAL REPORT



DUNLAP: Crimping the Incline Number 1 coal slack area with a John Deere tractor and homemade crimper.



CAMERON:  
CREEK Crimping the borrow area and burn pit behind the loadout structure left at SHPO's directive.



**CAMERON CREEK, SCHAFF, AND DUNLAP  
FINAL REPORT**

**IV. COST SUMMARY**

**A. Final Payment Request and Reconciliation Change Order**

Change Order Number 1 was issued April 17, 1989 with the Final Payment Request. This reconciliatory change order adjusted the final contract for actual acreage limed and revegetated and for amount of water used. Through negotiations between Ben Mundie and Tandy Construction, the final amount due was adjusted upward to reflect the total contract acreage versus the actual acreage reclaimed.

A copy of the Final Payment Request and Change Order 1 are contained in Appendix B of this report. These documents summarize the final quantities and costs for each item.

**B. Cost Per Site**

**1. Project Cost Summary**

<u>Site</u>	<u>Disturbed Acres</u>	<u>Cost/Acre</u>	<u>Total Project Cost</u>
Cameron Creek	1.01	\$ 8,532.10	\$ 8,617.42
Schaff	0.23	8,598.00	1,977.54
Dunlap	<u>0.733</u>	<u>7,552.37</u>	<u>5,535.89</u>
TOTAL	1.973	8,175.80	16,130.85
Negotiated Addition 3.34 Acres per contract			706.01
AMOUNT PAID TO CONTRACTOR			16,836.86

**2. Project Cost Breakdown**

<u>Item</u>	<u>Quantity</u>	<u>Cost per Unit</u>	<u>Cost per Acre</u>	<u>Total Cost</u>
CAMERON CREEK (1.01 acres)				
Mobilization	1 L.S.	900.00	891.09	900.00
Debris Removal	1 L.S.	2000.00	1980.20	2000.00
Salvage & Replace Topsoil	35 LCY	62.86	2178.22	2200.00
Provide Water	2 Kgal	41.0256	81.24	82.05
Close 2 Adits/ 4 Shafts	6 Each	222.22	1320.14	1333.34
Subsidence and/or Adit Depression Backfill	227 LCY	2.09	469.22	473.91
Lime Placement	0.62 Acres	1623.377	996.52	1006.49
Fertilize, Seed & Mulch	1.01 Acres	516.467	516.46	521.63
Farm Fence Closure Kit	1 Each	100.00	<u>99.01</u>	<u>100.00</u>
CAMERON CREEK TOTAL			8532.10	8617.42



**CAMERON CREEK, SCHAFF, AND DUNLAP  
FINAL REPORT**

**2. Project Cost Breakdown**

<u>Item</u>	<u>Quantity</u>	<u>Cost per Unit</u>	<u>Cost per Acre</u>	<u>Total Cost</u>
SCHAFF (0.23 acres)				
Mobilization	1 L.S.	200.00	869.57	200.00
Debris Removal	1 L.S.	750.00	3260.87	750.00
Close 1 Adit Opening	1 Each	222.22	966.17	222.22
Adit Depression Backfill	150 LCY	2.09	1361.52	313.15
Lime Placement	0.23 Acres	1623.377	1623.39	373.38
Fertilize, Seed & Mulch	0.23 Acres	516.467	<u>516.48</u>	<u>118.79</u>
SCHAFF TOTAL			8598.90	1977.54
DUNLAP (0.733 acres)				
Mobilization	1 L.S.	900.00	1227.83	900.00
Debris Removal	1 L.S.	1250.00	1705.32	1250.00
Provide Water	0.22 Kgal	41.0256	12.32	9.03
Close 1 Adit/ 1 Shaft	2 Each	222.22	606.33	444.44
Install Steel Grates in 3 Adit Entrances	3 Each	500.00	2046.38	1500.00
Subsidence and/or Adit Depression Backfill	102 LCY	2.09	290.50	212.94
Lime Placement	0.518 Acres	1623.377	1147.22	840.91
Fertilize, Seed & Mulch	0.733 Acres	516.467	<u>516.47</u>	<u>378.57</u>
DUNLAP TOTAL			7552.37	5535.89

**3. Cost Per Yard**

A total of 35 cubic yards of topsoil was moved at a lump sum price of \$2,200 or \$62.86 per yard. A total of 479 cubic yards of fill was placed in subsidence holes and adit openings and trenches at a lump sum cost of \$1,000 or \$2.09 per yard. Nine mine openings were backfilled at a lump sum price of \$2,000 or \$222.22 per opening. Three adits were closed by grate installation at a cost of \$1,500 or \$500 per opening.





CAMERON CREEK, SCHAFF, AND DUNLAP  
FINAL REPORT

V. SUMMARY

A. Completed Reclamation

The Contractor completed the sites involved in this project in the allowable contract time, using 25 calendar days of the 60 days allowed or 42% of the total. Construction was stopped several times due to weather conditions. This is typical when construction starts in the middle of December.

A total of 4 adit/inclines were backfilled and 3 inclines were closed by installing grates in the entrance. Five shallow shafts were backfilled.

B. Comments

It seems that with most AML jobs the contractor does not read the bid package and seldom reviews the site plans. Tandy Construction was no exception. They had not work with AML work before and had trouble grasping that this was "different" than Forest Service work. They had not worked with an on-site inspector before which resulted in numerous confrontations between the inspector and the contractor. Jim Tandy was under the impression that what he bid was what he got paid regardless of what service he actually provided on the job site. The first confrontation came at Dunlap (1st site reclaimed) when he did not bring a water truck. When the inspector made him provide water for compaction, Tandy came up with four 55-gallon drums full of water. This incident finally ended up in Spectrum's office where an explosive meeting took place between between Jim Tandy, Bill Wolff and Bill Maehl. Tandy agreed to bring a water truck to the next two sites.

After many disagreements (not wanting to strip topsoil, debris cleanup boundaries, etc.), the work was completed on the three sites as specified in the bid package and site plans.

They constructed their own crimping devise which worked fairly well. This crimper (as with every crimper we have seen to date) still has the problem of not having enough weight or the ability to add sufficient weight.



**CAMERON CREEK, SCHAFF, AND DUNLAP  
FINAL REPORT**

**C. Recommendations**

Prior to allowing a contractor to start work, all equipment to be used on the job should be brought to the site. Do not allow the contractor to start work with the promise that as soon as it is needed the equipment will be produced. By then it is much more difficult to shut the contractor down and force him to produce the equipment. A shut-down sets the scene for an explosive situation to develop where neither the contractor nor the inspector can "work" with each other.

Every item of work should be addressed at the pre-bid and the contractors physically taken to each work area. A difficulty developed at the Dunlap site on the first day of work on debris cleanup. The contractor said he was not "shown" all the areas requiring debris cleanup at the pre-bid. Even though the site plans clearly indicated that all on-site debris must be picked up and disposed of (including an estimate of debris quantity), he got very upset even before the real work had started.

The landowner at Cameron Creek grazes cows in the reclamation area, so the revegetation should be monitored annually.

Due to the amount of cover over the tipple adit, this should be monitored for additional subsidence. It had collapsed some during the one year time period from when engineering was completed and construction started.

Some small subsidence areas are inaccessible to large equipment for compaction. Perhaps the use of a small mechanical hand-held compaction device would be appropriate.



**APPENDIX A**

**SLIDE DESCRIPTIONS**

**BY PROJECT**





**DUNLAP SITE  
SLIDE DESCRIPTION**

<u>ASSIGNED NUMBER</u>	<u>DATE TAKEN</u>	<u>SUBJECT OR COMMENTS</u>
1	12/16/88	Pre-construction view of Incline 2 prior to grate installation.
2	12/20/88	Setting Incline 2 grate into place and final cleanup.
3	12/21/88	Incline 2 after face cleanup and placement of grate prior to concreting into place.
4	1/30/89	Cleaning snow from Incline 2 grate prior to concreting it into place.
5	1/30/89	Cement placement into Incline 2 grate forms.
6	1/30/89	The concrete for Incline 2 grate mixed in backhoe bucket.
7	1/30/89	Placing concrete into Incline 2 forms.
8	1/30/89	Placing layer of straw over and around concrete work to protect from freezing (Incline 2).
9	1/30/89	Placing layer of dirt over straw to protect from freezing (Incline 2).
10	4/04/89	Incline 2 several months later during concrete setup recheck.
11	4/14/89	Incline 2 had 1/2 inch play at top of grate. Tamped and reset until no play whatsoever.
12	12/12/88	Pre-construction view of Incline 3 with debris in front.
13	12/16/89	Incline 3 after debris removal.
14	12/21/89	Incline 3 prior to grate placement.
15	1/30/89	Placing 1st layer of straw over and around concrete in Incline 3 to prevent freezing.
16	1/30/89	Placing dirt over straw to prevent freezing (Incline 3).
17	1/30/89	Incline grate 3 concreted in place.
18	1/30/89	Placing 2nd layer of straw over dirt on Incline 3 to prevent freezing.
19	4/04/89	Incline 3 with grate several months after placement.
20	12/12/88	Pre-construction view of Incline 4.



**DUNLAP SITE  
SLIDE DESCRIPTION**

<u>ASSIGNED NUMBER</u>	<u>DATE TAKEN</u>	<u>SUBJECT OR COMMENTS</u>
21	12/12/88	Pre-construction view of Incline 4 slack pile & debris.
22	12/16/88	Incline 4 coal slack area from the hoist area.
23	12/12/88	Pre-construction view of hoist area near Incline 4.
24	1/30/89	Removing snow with backhoe from trench in front of Incline 4 prior to concrete work.
25	1/30/89	Removing snow by hand in front of Incline 4.
26	1/30/89	Cementing in grate on Incline 4.
27	1/30/89	Packing dirt around cement forms Incline 4 Grate.
28	1/30/89	Spreading straw on cement Incline 4 Grate.
29	1/30/89	Pouring cement from backhoe bucket Incline 4 grate.
30	4/04/89	Incline 4 grate.
31	12/12/88	Pre-construction Incline 1 coal slack pile.
32	12/13/88	Removing debris from Incline 1.
33	12/14/88	Dressing Incline 1 coal slack pile with dozer.
34	12/16/88	Incline 4 coal slack from hoist area.
35	12/16/88	Incline 1 coal slack area during grading.
36	12/19/88	Incline 1 coal slack after dressing.
37	12/16/88	SP 1 and burn pit area.
38	12/19/88	Dumping lime on Incline 1 area.
39	12/19/88	Dumping lime on Incline 1 area.
40	12/19/88	Dumping lime on Incline 1 area.
41	12/19/88	70% of truck load dumped (4 tons to Schaff).
42	12/19/88	Hauling lime with front end loader.
43	12/19/88	Spreading lime with front end loader.
44	12/19/88	Spreading lime with front end loader.





**DUNLAP SITE  
SLIDE DESCRIPTION**

<u>ASSIGNED NUMBER</u>	<u>DATE TAKEN</u>	<u>SUBJECT OR COMMENTS</u>
45	12/19/88	Lime spread on Incline 1 coal slack area.
46	12/20/88	Disking fertilizer on Incline 1 coal slack.
47	12/20/88	Disking fertilizer on Incline 1 coal slack.
48	12/20/88	Disking fertilizer on Incline 1 coal slack.
49	12/20/88	Seeding Incline 1 coal slack area.
50	12/20/88	Seeding Incline 1 coal slack area.
51	12/20/88	Seeding Incline 1 coal slack area.
52	12/20/88	Seeding Incline 1 coal slack area.
53	12/20/88	Mulching Incline 1 coal slack area.
54	12/20/88	Spreading mulch on Incline 1 coal slack.
55	12/20/88	Overall Incline 1 mulching.
56	12/20/88	Overall Incline 1, cistern, bath house, ice house and coal slack after mulching.
57	12/21/88	Overall after crimping Incline 1 & SP 1, & buildings.
58	12/21/88	Crimping Incline 1 coal slack.
59	12/21/88	Crimping Incline 1 coal slack.
60	12/21/88	Crimping Incline 1 coal slack.
61	12/21/88	Crimping SP 1.
62	12/21/88	Close-up of crimping SP 1.
63	12/21/88	Incline 1 coal slack with mulching complete.
64	12/21/88	Close-up of Incline 1 coal slack.
65	12/21/88	Mulch completed on SP 1 area - (burn pit).
66	12/21/88	Close-up of crimping Incline 1 coal slack.
67	1/30/89	Incline 1 coal slack one month after mulching.
68	1/30/89	Incline 1 coal slack one month after mulching.



**DUNLAP SITE  
SLIDE DESCRIPTION**

<u>ASSIGNED NUMBER</u>	<u>DATE TAKEN</u>	<u>SUBJECT OR COMMENTS</u>
69	4/04/89	Overall view of area looking west.
70	4/04/89	Incline 1 coal slack area looking east.
71	4/04/89	Overall view of area looking west.
72	12/16/88	SP 2 pre-construction.
73	12/21/88	View of SP 2.
74	12/16/88	Debris area north of cabin and cistern.
75	12/12/88	Pre-construction cabin and cistern area.
76	12/16/88	Cabin and cistern area looking southeast.
77	12/16/88	Cistern and cabin area prior to dressing.
78	12/19/88	Picking rocks and sage brush from cistern & house area.
79	12/20/88	Disking fertilizer on cistern area.
80	12/20/88	Spreading fertilizer on cistern area.
81	12/20/88	Spreading mulch on cistern area.
82	12/20/88	Spreading mulch on cistern area.
83	12/21/88	Crimping complete on cistern area.
84	1/30/89	Cabin and cistern area one month after mulching.
85	4/04/89	Cistern area and old cabin.
86	12/16/89	Debris area located south of Incline 3.
87	12/16/89	Coal slack area in front of bath house.
88	12/16/88	Coal slack area in front of ice house.
89	12/20/88	Disking area 2 coal slack in front of ice house.
90	12/20/88	Mulching complete on coal slack near bath and ice house.
91	12/20/88	Ice house Area 2 after crimping.
92	12/20/88	Crimping area 2, ice house area.
93	12/20/88	Area 2 ice house area after crimping.



**DUNLAP SITE  
SLIDE DESCRIPTION**

<u>ASSIGNED NUMBER</u>	<u>DATE TAKEN</u>	<u>SUBJECT OR COMMENTS</u>
94	12/20/88	Area 2 coal slack crimping.
95	12/20/88	Area 2 coal slack crimping.
96	12/20/88	Area 2 coal slack crimping.
97	12/21/88	Mulch complete at bath house area.
98	12/20/88	Mulch area near bath house.
99	12/21/88	Mulch complete near ice house.
100	12/21/88	Cistern area mulch complete.
101	12/12/88	Ford 9000 - 14 cu. yd. dump truck and trailer.
102	12/12/88	Allis-Chalmers 580 backhoe.
103	12/16/88	T-D8 Dozer.
104	12/19/88	40 straw bales, crimper, Brillion seed drill.
105	12/19/88	Homemade crimper.
106	12/20/88	John Deere 4060 farm tractor with crimper.
107	12/12/88	Old car parts stacked together.
108	12/16/88	Car parts and wood piled together.
109	12/13/88	SP 1 excavated for burn pit.
110	12/13/88	Piling debris near burn pit.
111	12/14/88	Fire in SP 1 burn pit.
112	12/14/88	Fire in SP 1 burn pit.
113	12/21/88	AMRB Work in Process Sign.
114	4/04/89	Ice house and bath house area.
115	12/12/88	Pre-Construction Incline 1.





DUNLAP  
INCLINE #2 PRIOR TO  
INSTALLING GRATE



1 12/16/88

DUNLAP  
CEMENTING IN GRATE  
@ #2 INCLINE



6 1/30/89

DUNLAP  
TAMPING IN CONCRETE  
FOOTINGS #2 INCLINE GRATE



11 4/14/89

DUNLAP  
INSTALLING  
GRATE INCLINE #2



2 12-20-88

DUNLAP  
PLACING CEMENT IN FORMS  
#2 INCLINE GRATE



7 1/30/89

DUNLAP  
PRE-CONST  
INCLINE #2



12 12-12-88

DUNLAP  
INCLINE #2  
GRATE BEFORE CEMENTING



3 12-21-88

DUNLAP  
PLACING STRAW ON FORMS  
IN #2 INCLINE GRATE



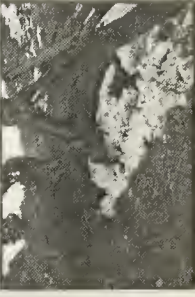
8 1/30/89

DUNLAP  
INCLINE #2 AFTER  
DEBRIS REMOVAL



13 12/17/89

DUNLAP  
CLEANING SNOW FROM  
GRATE IN #2 INCLINE



4 1/30/89

DUNLAP  
PLACING 2 INCHES OF STRAW  
ON STRAW IN INCLINE  
#2



9 1/30/89

DUNLAP  
INCLINE #2  
PRIOR TO GRATE PLACEMENT



14 12/24/89

DUNLAP  
CEMENT PLACED IN LEFT  
FORM #2 INCLINE GRATE



5 1/30/89

DUNLAP  
INCLINE #2 W/GRATE



10 4/4/89

DUNLAP  
PLACING STRAW ON CEMENT  
#3 INCLINE GRATE

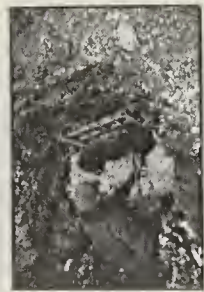


15 1/30/89





DUNLAP  
END COVER OF DIRT PAVED  
ON STEW #3 INCLINE



16 1/30/89

DUNLAP  
GRATE CEMENTED IN  
AND LAYER OF DIRT  
PLACED AROUND FORMS



17 1/30/89  
INCLINE #3

DUNLAP  
PRE-CONST  
INCLINE #4 COAL SLACK



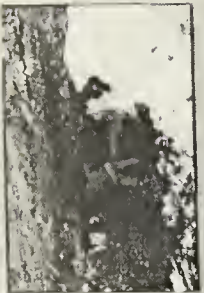
21 12-12-88

DUNLAP  
INCLINE #4 COAL SLACK  
AREA FROM WEST AREA



22 12/16/88

DUNLAP  
CEMENTING IN GRATE  
IN #4 INCLINE



26 1/30/89

DUNLAP  
PACKING DIRT AROUND  
CEMENT FORMS #4 INCLINE GRATE



27 1/30/89

DUNLAP  
PLACING STEW OVER  
CEMENT #3 INCLINE GRATE



18 1/30/89

DUNLAP  
PRE-CONST  
HOIST AREA NEAR INCLINE 4



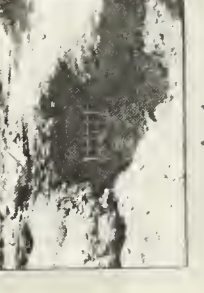
23 12-12-88

DUNLAP  
SPREADING STEW  
ON CEMENT #4 INCLINE GRATE



28 1/30/89

DUNLAP  
INCLINE #3 W/GRATE



19 4/4/89

DUNLAP  
REMOVING SNOW FROM  
#4 INCLINE GRATE



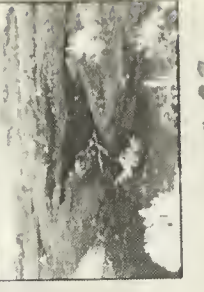
24 1/30/89

DUNLAP  
CEMENTING IN  
GRATE IN #4 INCLINE



29 1/30/89

DUNLAP  
PRE-CONST.  
INCLINE #4



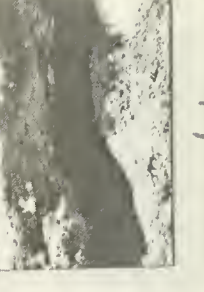
20 12-12-88

DUNLAP  
REMOVING SNOW  
FROM #4 INCLINE GRATE



25 1/30/89

DUNLAP  
INCLINE #4  
GRATE



30 4/4/89





DUNLAP  
PRE-CONST  
INCLINE #1 COAL SLACK



12/12/88

31

DUNLAP  
INCLINE #1  
COAL SLACK AFTER DRESSING



36 12-19-88

DUNLAP  
70% off line  
unloaded



41 12-19-88

DUNLAP  
REMOVING  
DEBRIS INCLINE #1



12-13-88

32

DUNLAP  
SP-1 & BURN PIT  
COVERED W/COAL SLACK



37 12-16-88

DUNLAP  
Hauling Line  
with fuel end loader



42 12-16-88

DUNLAP  
DRESSING  
INCLINE #1 COAL SLACK



12-14-88

33

DUNLAP  
Dumping Line  
incline #1 coal slack



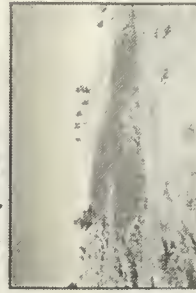
38 12-16-88

DUNLAP  
SPREADING  
LINE w/ fuel end loader



43 12-16-88

DUNLAP  
INCLINE #1 COAL SLACK  
DURING GRADING



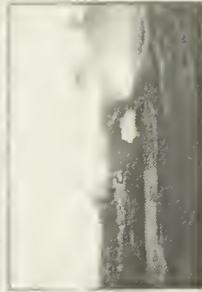
34 12/14/88

DUNLAP  
Dumping Line  
incline #1 coal slack



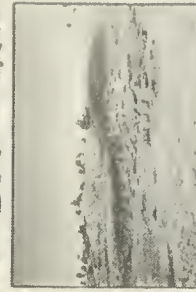
39 12-19-88

DUNLAP  
SPREADING  
LINE w/ fuel end loader



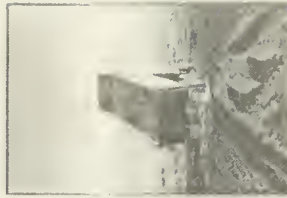
44 12-19-88

DUNLAP  
INCLINE #1 COAL SLACK  
BEEN DURING GRADING



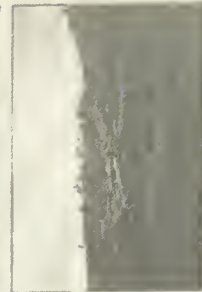
35 12/14/88

DUNLAP  
Dumping Line



40 12-19-88

DUNLAP  
LINE SPREADING  
INCLINE #1 COAL SLACK



45 12-19-88



Dunlap  
DICKING FRONT  
INCLINE #1 AREA



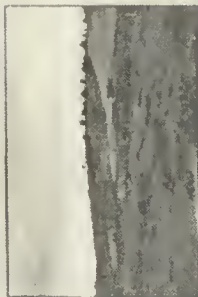
46 12-20-88

Dunlap  
SEEDING  
#1 INCLINE AREA



51 12-20-88

Dunlap  
MULCH  
OVER ALL #1 INCLINE



52  
CISTERN, ICE HOUSE  
AND BATH HOUSE  
COAL SLACK  
12-20-88

Dunlap  
DICKING FRONT  
INCLINE #1 AREA



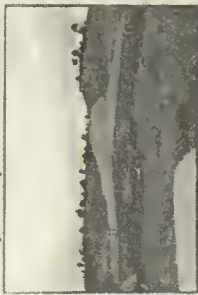
47 12-20-88

Dunlap  
SEEDING  
INCLINE #1 AREA



52 12-20-88

Dunlap  
OVERALL  
INCLINE #1, SP-1, BATH SKELTON



53  
12/31/88

Dunlap  
DICKING FRONT  
INCLINE #1 AREA



48 12-20-88

Dunlap  
MULCH  
AREA #1



53 12-20-88

Dunlap  
CRIMPING  
COAL SLACK AREA #1



54 12-21-88

Dunlap  
SEEDING  
INCLINE #1 AREA



49 12-20-88

Dunlap  
SPREADING  
MULCH ON #1 INCLINE COAL SLACK



54 12-20-88

Dunlap  
CRIMPING  
SP-1 J. DEER & HOME MADE CAMP



55  
12/21/88

Dunlap  
MULCHING  
INCLINE #1 AREA



50 12-20-88

Dunlap  
MULCHING  
OVER ALL #1 INCLINE



55 12-20-88

Dunlap  
CRIMPING  
INCLINE #1 COAL SLACK



60 12-21-88



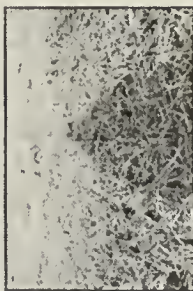


Dunlap  
Camping  
SP-1



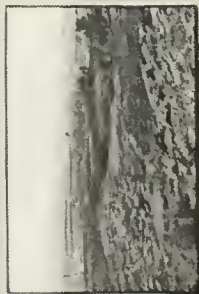
61 12/21/88

Dunlap  
Camping  
inclined coal stack



66 12-20-88

Dunlap  
OVERALL  
Looking west



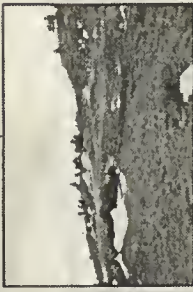
67 12/4/89

Dunlap  
Close up  
crimper SP-1



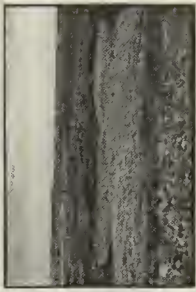
62 12/24/89

Dunlap  
coal stack incline #1  
after 1 month after  
mulching



67 1/30/89

Dunlap  
mulch Comp.  
incline #1 coal stack



63 12/21/88

Dunlap  
coal stack incline #1  
1 month after mulching



68 1/30/89

Dunlap  
Close up  
mulch incline #1 coal stack



64 12/24/88

Dunlap  
OVERALL  
Looking west



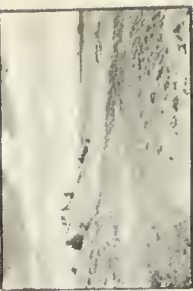
69 4/4/89

Dunlap  
mulch Comp.  
SP-1



65 12/24/88

Dunlap  
Looking East  
Toward incline #1 coal stack



70 4/4/89





DUNLAP

SP-2 PRE-CONST.



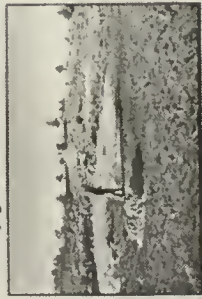
72 12/14/88

DUNLAP  
CISTERN & CABIN AREA  
PRIOR TO DRESSING



77 12/16/88

DUNLAP  
MUCKING  
CISTERN AREA



82 12-20-88

DUNLAP

SP-2



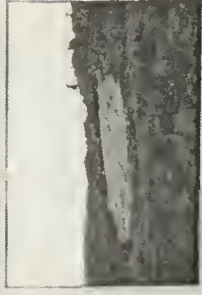
73 12/24/88

DUNLAP  
CLEANUP AREA  
CISTERN & PLAYHOUSE AREA



78 12-19-88

DUNLAP  
CAMPING COMP.  
CISTERN AREA



83 12-21-88

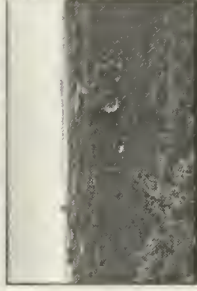
DUNLAP

DRESS. AREA NORTH OF  
CABIN & CISTERN



74 12/16/88

DUNLAP  
DISKING PLOT  
CISTERN AREA



79 12-20-88

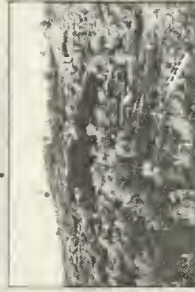
DUNLAP  
CABIN AND CISTERN AREA  
1 MONTH AFTER MUCKING



84 1/20/89

DUNLAP

PRE-CONST.  
OLD CABIN & CISTERN AREA



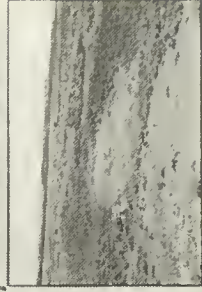
75 12-12-88

DUNLAP  
SPREADING  
PLOT. CISTERN AREA



80 12-20-88

DUNLAP  
OLD CABIN  
& CISTERN AREA



85 4/4/89

DUNLAP

CABIN & CISTERN AREA  
LOOKING S.E.



76 12/16/88

DUNLAP  
SPREADING  
MUCK CISTERN AREA



81 12-20-88





DUNLAP  
DEBRIS AREA SOUTH  
OF INCLINE #3



86 12/16/88

DUNLAP  
CONSLACK AREA IN  
FRONT OF BATH HOUSE



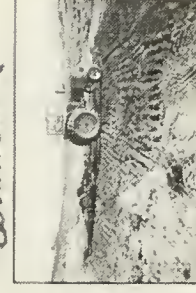
87 12/16/88

DUNLAP  
CONSLACK AREA IN  
FRONT OF ICE HOUSE



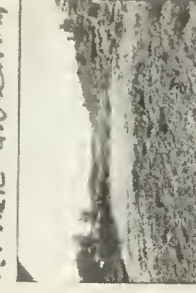
88 12/16/88

DUNLAP  
DISKING  
AREA #2  
CONSILACK



ICE HOUSE  
89 12-20-88

DUNLAP  
AREA #1 & 2  
AFTER MULCHING



90 12-20-88

DUNLAP  
AREA #2  
AFTER CAMPING



ICE HOUSE AREA

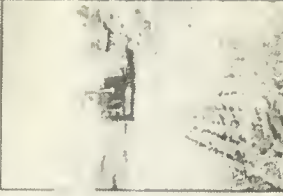
91 12-20-88

DUNLAP  
CAMPING  
AREA #2 ICE HOUSE



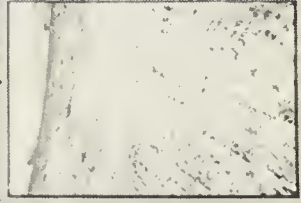
94 12-20-88

DUNLAP  
CAMPING AREA #2



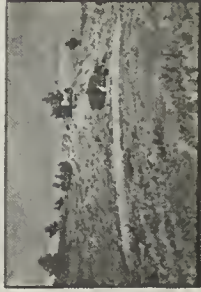
ICE HOUSE  
95 12-20-88

DUNLAP  
CAMPING AREA #2



ICE HOUSE  
12-20-88

DUNLAP  
MULCH COMP...  
BATH HOUSE AREA



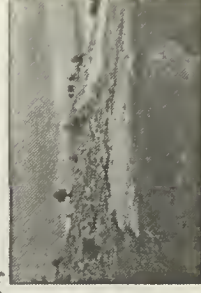
97 12/16/88

DUNLAP  
MULCH AREA  
#3 BATH HOUSE



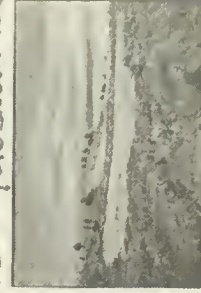
98 12-20-88

DUNLAP  
MULCHING  
COMP. ROAD ICE HOUSE



99 12/16/88

DUNLAP  
MULCH COMP...  
CISTERN JOIDCASH AREA



100 12/16/88





DUNLAP

FORD DUMP TRUCK  
14000000



101 12-12-88

DUNLAP

580-C  
BACK HOE



12-12-88

102

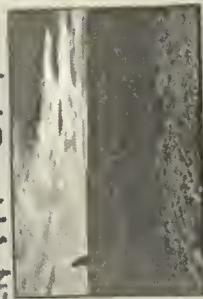
DUNLAP  
John Deere 4600 w/  
CRUMPER



106 12-20-88

DUNLAP

FIRE IN  
BURN PIT SP-1



12-14-88

111

DUNLAP

OLD CAR PARTS  
STACKED TOGETHER

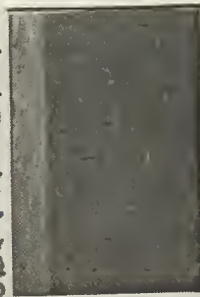


12-12-88

107

DUNLAP

FIRE IN  
BURN PIT SP-1



12-14-88

DUNLAP

T-DB CAT



103 12/14/88

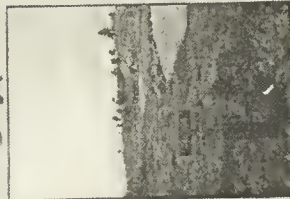
DUNLAP

CAR PARTS & WOOD  
Piled Together



108 12/14/88

DUNLAP  
SUGAR



109 12/21/88

DUNLAP

SP-1  
EXCAVATED FOR BURN PIT



12-13-88

109

DUNLAP

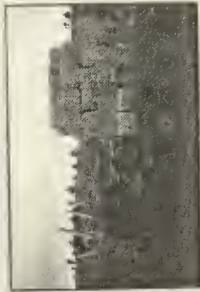
ICE HOUSE  
& BATHHOUSE AREAS



4/4/89

DUNLAP

STEAM, CUMMINS  
BAILON DRIU



104 12-19-88

DUNLAP

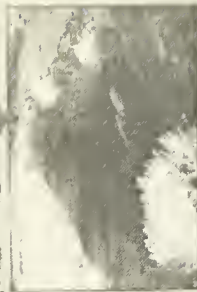
PILING DECKS  
NEAR BURN PIT



110 12-13-88

DUNLAP

PRE-CONST.  
INCLINE # 1



115 12-12-88

DUNLAP

HOME MADE CUMMINS



105 12-19-88



SCHAFF SITE  
SLIDE DESCRIPTION

<u>ASSIGNED NUMBER</u>	<u>DATE TAKEN</u>	<u>SUBJECT OR COMMENTS</u>
116	4/04/89	Pre-construction of adit and adit trench.
117	4/04/89	Loading debris from adit.
118	4/04/89	Debris removal by dump truck to Cameron Creek.
119	4/04/89	Adit opening after debris removal.
120	4/04/89	Pre-construction east coal outcrop.
121	4/04/89	Pre-construction adit coal slack pile.
122	4/04/89	Pre-construction east coal outcrop.
123	4/04/89	Pre-construction west coal outcrop.
124	4/10/89	Spreading lime on coal slack area.
125	4/10/89	Overall view of site after disking lime.
126	4/10/89	Overall view of site after disking lime.
127	4/10/89	Disking fertilizer into revegetation area.
128	4/10/89	Disking fertilizer into revegetation area.
129	4/10/89	Seeding revegetation area.
130	4/10/89	Close-up view of revegetation seeding.
131	4/10/89	Mulch crimped on coal outcrop.
132	4/10/89	Overall view of completed crimp job.
133	4/10/89	Crimping west coal outcrop.
134	4/10/89	Crimping west coal outcrop.
135	4/10/89	Spreading mulch on west coal outcrop.
136	4/10/89	Crimping in mulch.
137	4/10/89	Crimping in mulch.
138	4/10/89	Crimping in mulch.
139	4/10/89	Spreading mulch on west coal outcrop.
140	4/10/89	Overall view of mulch and crimping.





SCHUFF  
PRE-CONST.  
ADIT AND DEPRESSION



116 4/4/89

SCHUFF  
DEBRIS REMOVAL  
FROM ADIT DEPRESSION



117 4/4/89

SCHUFF  
LOADING DEBRIS  
FROM ADIT



118 4/4/89

SCHUFF  
ADIT OPENING AFTER  
DEBRIS REMOVAL



119 4/4/89

SCHUFF  
PRE-CONST.  
EAST COAL OUTCROP



120 4/4/89

SCHUFF  
PRE-CONST.  
ADIT COAL SLACK PILE



121 4/4/89

SCHUFF  
SPREADING LIME  
ON ADIT COAL SLACK



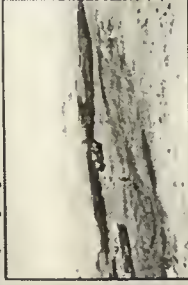
124 4/10/89

SCHUFF  
OVERALL OF AREA  
AFTER DISKING LIME



125 4/10/89

SCHUFF  
OVERALL AFTER  
SPREADING & DISKING LIME



126 4/10/89

SCHUFF  
DISKING FERT.  
ADIT AREA



127 4/10/89

SCHUFF  
DISKING FERT.  
ADIT WHEN



128 4/10/89

SCHUFF  
SEEDING ADIT  
ADIT COAL SLACK AREA



129 4/10/89

SCHUFF  
SEEDING ADIT  
ADIT COAL SLACK AREA



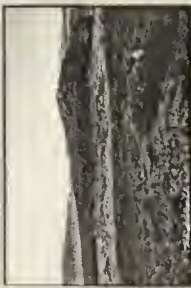
130 4/10/89





SCHAF

CRIMPING  
ON WEST COAL OUTCROP



131 4/10/89

SCHAF

CRIMPING  
ON WEST COAL OUTCROP



136 4/10/89

SCHAF

COMP. MULCH  
ON WEST COAL OUTCROP



132 4/10/89

SCHAF

CRIMPING  
ON WEST COAL OUTCROP



137 4/10/89

SCHAF

CRIMPING  
ON WEST COAL OUTCROP



133 4/10/89

SCHAF

CRIMPING  
ON WEST COAL OUTCROP



138 4/10/89

SCHAF

CRIMPING  
ON WEST COAL OUTCROP



134 4/10/89

SCHAF

CRIMPING  
ON WEST COAL OUTCROP



139 4/10/89

SCHAF

MULCHING  
ADIT & COAL SLACK AREA



135 4/10/89

SCHAF

MULCHING  
ADIT & COAL SLACK AREA



140 4/10/89



**CAMERON CREEK SITE  
SLIDE DESCRIPTION**

<u>ASSIGNED NUMBER</u>	<u>DATE TAKEN</u>	<u>SUBJECT OR COMMENTS</u>
141	4/04/89	Pre-construction view of AS-2.
142	4/13/89	AS-2 after backfilling prior to topsoiling.
143	4/13/89	Spreading topsoil on AS-2.
144	4/14/89	Crimping mulch on AS-2.
145	4/14/89	Completed reclamation of AS-2.
146	4/14/89	Pre-construction view of AS-1.
147	4/13/89	Topsoil and debris removed from AS-1.
148	4/13/89	AS-1 after backfilling prior to topsoiling.
149	4/13/89	Spreading topsoil on AS-1.
150	4/13/89	Disking fertilizer into AS-1.
151	4/13/89	Spreading mulch on AS-1.
152	4/14/89	Crimping mulch into AS-1.
153	4/14/89	Completed reclamation of AS-1.
154	4/14/89	Overall view of Vipond portion of Cameron Creek Site.
155	4/04/89	Pre-construction view of AS-3.
156	4/14/89	Crimping mulch into AS-3.
157	4/14/89	Crimping mulch into AS-3.
158	4/14/89	Completed reclamation of AS-3.
159	4/04/89	Pre-construction view of SP-3.
160	4/13/89	Topsoil removal from SP-3.
161	4/13/89	Backfilling SP-3 with front-end loader.
162	4/13/89	Dumping backfill material into SP-3.
163	4/14/89	Disking fertilizer into SP-3.
164	4/14/89	Crimping mulch into SP-3.
165	4/14/89	Crimping mulch into SP-3.





**CAMERON CREEK SITE  
SLIDE DESCRIPTION**

<u>ASSIGNED NUMBER</u>	<u>DATE TAKEN</u>	<u>SUBJECT OR COMMENTS</u>
166	4/14/89	Completed reclamation of SP-3.
167	4/04/89	Pre-construction view of SP-5.
168	4/12/89	Removing topsoil with backhoe from SP-5.
169	4/13/89	Compacting SP-5 with dump truck after backfilling.
170	4/13/89	Spreading topsoil on SP-5.
171	4/14/89	Crimping mulch on SP-5.
172	4/15/89	Crimping mulch on SP-5.
173	4/15/89	Crimping mulch on SP-5.
174	4/04/89	Pre-construction view of SP-1.
175	4/13/89	Topsoil and debris removal from SP-1.
176	4/14/89	Crimping mulch on SP-1.
177	4/04/89	Pre-construction of SP-2.
178	4/13/89	Topsoil and debris removal from SP-2.
179	4/04/89	Pre-construction of SP-5A.
180	4/04/89	Pre-construction of SP-5B.
181	4/12/89	Fence cut at wooden post.
182	4/14/89	Blocking open fence with J.D. tractor.
183	4/15/89	Mending access fence to Darrel slack pile.
184	4/15/89	Mending access fence to Darrel slack pile.
185	4/15/89	Close-up view of fence splicing devise.
186	4/15/89	Four strand fence after splicing.
187	4/04/89	Pre-construction view of Darrel slack pile.
188	4/13/89	Loading coal from Darrel slack pile.
189	4/13/89	Dressing Darrel slack pile.
190	4/13/89	Spreading lime on Darrel slack pile.



**CAMERON CREEK SITE  
SLIDE DESCRIPTION**

<u>ASSIGNED NUMBER</u>	<u>DATE TAKEN</u>	<u>SUBJECT OR COMMENTS</u>
191	4/13/89	Disking lime on Darrel coal slack pile.
192	4/13/89	Seeding Darrel coal slack pile.
193	4/14/89	View of Darrel slack pile after crimping mulch.
194	4/14/89	View of Darrel slack pile after crimping mulch.
195	4/04/89	Pre-construction view of SP-6.
196	4/05/89	Removing debris from SP-6.
197	4/05/89	Shaft opening in SP-6 after debris removal.
198	4/05/89	Smashing metal with backhoe in SP-6.
199	4/10/89	Hauling coal slack (fill) to SP-6.
200	4/10/89	Spreading coal slack on SP-6.
201	4/05/89	Pre-construction view of AS-4.
202	4/05/89	Removing debris from AS-4.
203	4/10/89	Dumping coal slack fill in AS-4.
204	4/12/89	Disking lime on AS-4.
205	4/12/89	AS-4 with mulch spread prior to crimping.
206	4/12/89	Crimping mulch on AS-4.
207	4/12/89	Crimping mulch on AS-4.
208	4/14/89	Straw mulch and 500 gallon water tank on trailer.
209	4/04/89	Pre-construction view of Gustafson/Johnson coal slack.
210	4/04/89	Pre-construction view of Gustafson/Johnson adit.
211	4/05/89	Cleaning out entrance of Gustafson/Johnson adit.
212	4/10/89	Hauling slack from Gustafson/Johnson coal slack pile.
213	4/12/89	Backhoe filling Gustafson/Johnson adit.
214	4/12/89	Watering Gustafson/Johnson backfill.
215	4/12/89	Backfilling Gustafson/Johnson adit.



**CAMERON CREEK SITE  
SLIDE DESCRIPTION**

<u>ASSIGNED NUMBER</u>	<u>DATE TAKEN</u>	<u>SUBJECT OR COMMENTS</u>
216	4/12/89	Watering Gustafson/Johnson backfill.
217	4/12/89	Backfilled adit prior to seeding.
218	4/12/89	Seeding Gustafson/Johnson slack area after liming.
219	4/12/89	Spreading mulch on slack area.
220	4/12/89	Crimping mulch on slack area.
221	4/12/89	Crimping mulch on slack area.
222	4/12/89	Completed reclamation on slack area.
223	4/13/89	Completed reclamation on slack area.
224	1/31/89	Digging burn pit between tipple and borrow.
225	4/04/89	Burn pit between tipple adit and borrow area.
226	4/05/89	Burning debris.
227	4/05/89	Burning debris.
228	4/05/89	Burn pit and tipple.
229	4/10/89	Dressing burn pit area.
230	4/04/89	Scale house debris in front of tipple.
231	4/04/89	Scale house hole after debris removal.
232	4/10/89	Backfilling scale house foundation.
233	4/12/89	Scale house foundation.
234	4/04/89	Pre-construction view of SP-8.
235	4/04/89	Pre-construction view of SP-7.
236	4/12/89	SP-7 after filling with coal slack.
237	4/12/89	SP-7 prior to crimping.
238	4/04/89	Pre-construction view of tipple adit.
239	4/05/89	Debris removal from tipple adit trench.
240	4/12/89	Watering tipple adit trench.





**CAMERON CREEK SITE  
SLIDE DESCRIPTION**

<u>ASSIGNED NUMBER</u>	<u>DATE TAKEN</u>	<u>SUBJECT OR COMMENTS</u>
241	4/12/89	Watering tipple adit trench.
242	4/12/89	Dumping coal slack in tipple adit trench.
243	4/12/89	Compacting coal slack in tipple adit trench.
244	4/12/89	Wet area caused by snow and ice.
245	4/12/89	Tipple adit trench filled with coal slack and limed.
246	4/12/89	Wet area caused by snow and ice.
247	4/12/89	Tipple borrow area and burn pit.
248	4/12/89	Tipple adit and borrow area before mulching.
249	4/12/89	Tipple adit after grading.
250	4/12/89	Dressing face of adit.
251	4/12/89	Dressing borrow area and burn pit with dozer.
252	4/12/89	Dressing borrow area with dozer.
253	4/12/89	Dressing borrow area.
254	4/12/89	Tipple area fertilizing and disking complete.
255	4/12/89	Tipple area fertilizing and disking complete.
256	4/12/89	Seeding tipple area.
257	4/12/89	Seeding tipple area.
258	4/04/89	Pre-construction view of tipple area.
259	4/12/89	Dressing tipple area.
260	4/12/89	Seeding tipple area.
261	4/13/89	Crimping mulch on tipple area.
262	4/13/89	Crimping mulch on tipple adit.
263	4/13/89	Spreading mulch on tipple area.
264	4/13/89	Crimping mulch on tipple area.
265	4/13/89	Crimping mulch on tipple adit.



**CAMERON CREEK SITE  
SLIDE DESCRIPTION**

<u>ASSIGNED NUMBER</u>	<u>DATE TAKEN</u>	<u>SUBJECT OR COMMENTS</u>
266	4/13/89	Crimping tipple adit face.
267	4/13/89	Crimping tipple adit.
268	4/13/89	Crimping mulch on tipple adit area.
269	4/13/89	Hawk or eagle nest on hillside high above AS-4.
270	4/13/89	Overall view of job after completion.
271	4/13/89	Overall view of job after completion.
272	4/13/89	Garbage pit dug for landowner.
273	4/13/89	Garbage pit dug for landowner.
274	4/04/89	Pre-construction view of tipple and coal slack.
275	4/04/89	Pre-construction view of tipple and coal slack.
276	4/04/89	Pre-construction view of tipple and coal slack.
277	4/05/89	Dressing tipple coal slack pile.
278	4/05/89	Dressing tipple coal slack pile.
279	4/05/89	Dressing tipple coal slack pile.
280	4/12/89	Disking lime on tipple coal slack pile.
281	4/12/89	Disking lime on tipple coal slack pile.
282	4/12/89	Disking lime on tipple coal slack pile.
283	4/12/89	Seeding tipple coal slack pile.
284	4/12/89	Seeding tipple coal slack pile.
285	4/12/89	Disking fertilizer tipple coal slack pile.
286	4/12/89	Seeding tipple coal slack pile.
287	4/12/89	Spreading mulch on tipple coal slack pile.
288	4/12/89	Spreading mulch on tipple coal slack pile.
289	4/12/89	Crimping mulch on tipple coal slack pile.
290	4/12/89	Crimping mulch on tipple coal slack pile.





CAMERON CREEK SITE  
SLIDE DESCRIPTION

<u>ASSIGNED NUMBER</u>	<u>DATE TAKEN</u>	<u>SUBJECT OR COMMENTS</u>
291	4/12/89	Crimping mulch on tipple coal slack pile.
292	4/12/89	Crimping mulch on tipple on coal slack pile.
293	4/12/89	Crimping mulch on tipple coal slack pile.
294	4/14/89	Completed revegetation on tipple coal slack area.
295	4/14/89	Completed revegetation on tipple coal slack area.
296	4/14/89	Completed revegetation on tipple coal slack area.
297	4/13/89	Completed revegetation on tipple coal slack area.

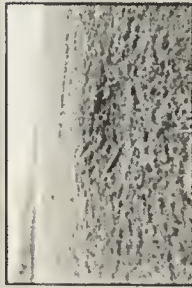


CAMERON CRK. VIBOND  
" PRE-CONST  
AS-2



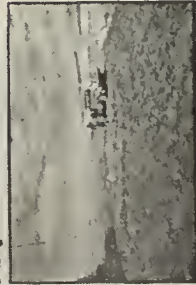
4/4/89 141

CAMERON CRK. VIBOND  
" PRE-CONST  
AS-1



4/4/89 146

CAMERON CRK. VIBOND  
" SPREADING  
MULCH ON AS-1



4/13/89 151

CAMERON CRK. VIBOND  
" AS-2 before  
ADDING TOPSOIL



4/13/89 142

CAMERON CRK. VIBOND  
" TOPSOIL &  
DEBRIS REMOVED AS-1



4/13/89 147

CAMERON CRK. VIBOND  
" CRIMPING  
AS-1



4/14/89 152

CAMERON CRK. VIBOND  
" SPREADING  
TOPSOIL AS-2



4/13/89 143

CAMERON CRK. VIBOND  
" AS-1 before  
ADDING TOPSOIL



4/13/89 148

CAMERON CRK. VIBOND  
" CRIMPING  
COMPLETE AS-1



4/14/89 153

CAMERON CRK. VIBOND  
" CRIMPING  
AS-2



4/14/89 144

CAMERON CRK. VIBOND  
" SPREADING  
TOPSOIL AS-1



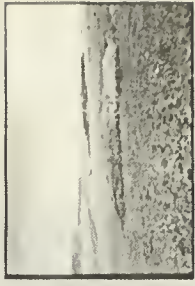
4/13/89 149

CAMERON CRK. VIBOND  
" OVERWILL VIBOND SITE



4/14/89 154

CAMERON CRK. VIBOND  
" MULCH & CRIMPING  
COMPLETE AS-2



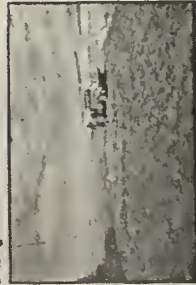
4/14/89 145

CAMERON CRK. VIBOND  
" DSKING  
FEET. AS-1



4/13/89 150

CAMERON CRK. VIBOND  
" SPREADING  
MULCH ON AS-1



4/13/89 151



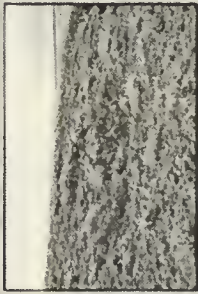


CAMERON CRK. V. POND  
"PRE-Const.  
AS-3



" " 4/4/89 155

CAMERON CRK. V. POND  
"PRE-Const.  
SP-3



" " 4/4/89 159

CAMERON CRK. V. POND  
"Disking Feet. SP-3



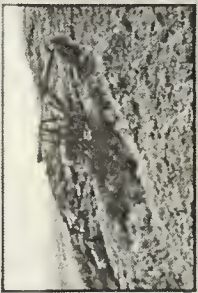
" " 4/4/89 163

CAMERON CRK. V. POND  
"CRIMPING MULCH AS-3



" " 4/4/89 156

CAMERON CRK. V. POND  
"TOPSOIL AND  
DEBRIS REMOVAL SP-3



" " 4/13/89 160

CAMERON CRK. V. POND  
"CRIMPING MULCH SP-3



" " 4/14/89 164

CAMERON CRK. V. POND  
"CRIMPING MULCH AS-3



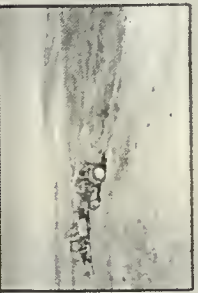
" " 4/14/89 157

CAMERON CRK. V. POND  
"BORROW TO  
SP-3



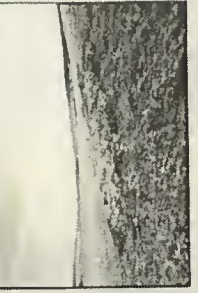
" " 4/13/89 161

CAMERON CRK. V. POND  
"CRIMPING MULCH SP-3



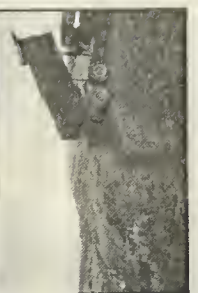
" " 4/14/89 165

CAMERON CRK. V. POND  
"CRIMPING MULCH Comp. SP-3



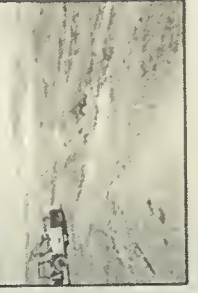
" " 4/14/89 158

CAMERON CRK. V. POND  
"BORROW  
TO SP-3



" " 4/12/89 162

CAMERON CRK. V. POND  
"SP-3 Complete



" " 4/14/89 166





CAMERON CRK. V. POND  
PRE-CONST.  
SP-5



4/4/89 167

CAMERON CRK. V. POND  
CRIMPING MULCH SP-5



4/15/89 172

CAMERON CRK. V. POND  
PRE-CONST.  
SP-2



4/4/89 177

CAMERON CRK. V. POND  
REMOVING TOPSOIL  
FROM SP-5



4/12/89 168

CAMERON CRK. V. POND  
CRIMPING MULCH SP-5



4/15/89 173

CAMERON CRK. V. POND  
TOPSOIL AND  
DEBRIS REMOVAL SP-2



4/12/89 178

CAMERON CRK. V. POND  
COMPACTING  
SP-5 W/ 9000 POND DUMP



4/12/89 169

CAMERON CRK. V. POND  
PRE-CONST.  
SP-1



4/4/89 174

CAMERON CRK. V. POND  
PRE-CONST.  
SP-5A



4/4/89 179

CAMERON CRK. V. POND  
SPREADING  
TOPSOIL TO SP-5



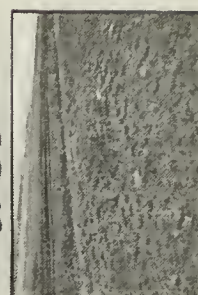
4/13/89 170

CAMERON CRK. V. POND  
TOPSOIL AND DEBRIS  
REMOVAL SP-1



4/13/89 175

CAMERON CRK. V. POND  
PRE-CONST.  
SP-5B



4/4/89 180

CAMERON CRK  
CRIMPING  
SP-6



4/14/89 171

CAMERON CRK. V. POND  
CRIMPING MULCH SP-1



4/14/89 176











CAMERON CRK. Loadout  
PRE-Const. SP-4



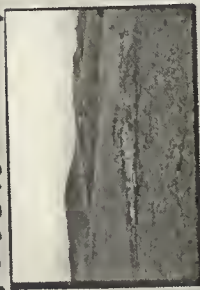
4/4/89 195

CAMERON CRK. Loadout. 10  
SPREADING  
COAL SLACK ON SP-4



4/10/89 200

CAMERON CRK. Loadout  
AS-4  
Prior to CEMPING



4/12/89 205

CAMERON CRK. Loadout 1  
REMOVING  
DEBRIS FROM SP-6



4/5/89 196

CAMERON CRK. Loadout  
PRE-Const  
AS-4



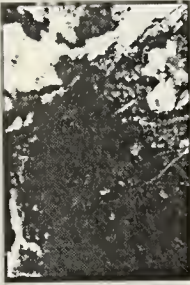
4/4/89 201

CAMERON CRK. Loadout  
CEMPING  
AS4. J.D. 4030 & CEMPAU



4/12/89 206

CAMERON CRK. Loadout  
SHIFT OPENING  
IN SP-6 while REMOVING Debris



4/5/89 197

CAMERON CRK. Loadout  
REMOVING DEBRIS  
AS-4



4/5/89 202

CAMERON CRK. Loadout  
CEMPING  
AS-4



4/14/89 207

CAMERON CRK. Loadout  
SMASHING METAL  
w/ BACKHOE SP-4



4/5/89 198

CAMERON CRK. Loadout  
Dumping Coal Slack  
IN AS-4



4/10/89 203

CAMERON CRK. Loadout  
STEAMWINDY  
500 GAL. WATER TR.



4/14/89 208

CAMERON CRK. Loadout 9  
COAL SLACK  
TO SP-6



4/10/89 199

CAMERON CRK. Loadout  
DISKING LINE  
ON AS-4



4/12/89 204









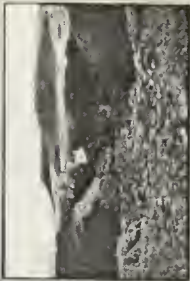


CAMERON CRK. LOADOUT 24  
Digging out Burn  
Pit between tipples & Boerum



1/31/89 224

CAMERON CRK. LOADOUT  
Dressing  
Burn Pit Area



4/10/89 229

CAMERON CRK. LOADOUT  
Burn Pit between Tipples  
ADIT & Boerum Area



4/4/89 225

CAMERON CRK. LOADOUT  
SCALE HOUSE DEBRIS  
w/ Tipples & Coalstack



4/4/89 230

CAMERON CRK. Loadout  
PUE-Const.  
SP-7



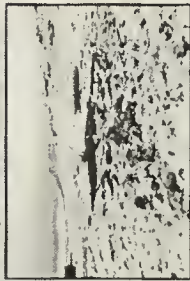
4/4/89 236

CAMERON CRK. Loadout  
Culling Debris



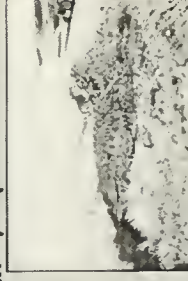
4/5/89 226

CAMERON CRK. Loadout  
Scale House  
after DEBRIS REMOVAL



4/5/89 231

CAMERON CRK. Loadout  
SP-7 after  
filling w/ coalstack



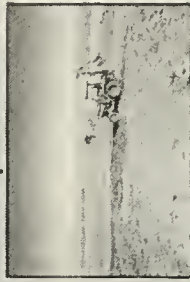
4/12/89 236

CAMERON CRK. Loadout  
BURNING DEBRIS



4/5/89 227

CAMERON CRK. Loadout 24  
Backfilling Scale House



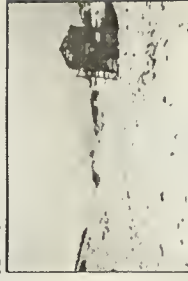
4/10/89 232

CAMERON CRK. Loadout  
SP-7  
PUE to Camping



4/12/89 237

CAMERON CRK. Loadout  
Burn Pit  
in Relation to Tipples



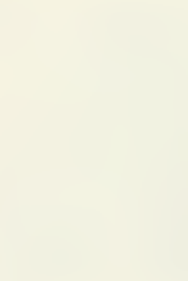
4/5/89 228

CAMERON CRK. Loadout  
Scale House  
Below Tipples



4/10/89 233

CAMERON CRK. Loadout  
PUE-Const.  
SP-8



4/4/89 234





CAMERON CRK. LOADOUT  
 PREG-CONC  
 TIPPLE ADIT AND TRENCH SW



4/4/89 238

CAMERON CRK. LOADOUT  
 COMPACTING  
 COAL SLACK IN ADIT TRENCH



4/12/89 243

CAMERON CRK. LOADOUT  
 TIPPLE ADIT & BORROW AREA  
 BEFORE MATCHING



4/12/89 248

CAMERON CRK. LOADOUT  
 REMOVING DEBRIS  
 FROM ADIT TRENCH



4/5/89 239

CAMERON CRK. LOADOUT  
 WET AREA  
 CAUSED BY SNOW & ICE



4/12/89 244

CAMERON CRK. LOADOUT  
 TIPPLE ADIT  
 AFTER GRADING



4/12/89 249

CAMERON CRK. LOADOUT  
 UNWATERING  
 TIPPLE ADIT TRENCH



4/12/89 240

CAMERON CRK. LOADOUT  
 TIPPLE ADIT TRENCH W/  
 COAL SLACK & LIMESTONE



4/14/89 245

CAMERON CRK. LOADOUT  
 DRESSING  
 FACE OF ADIT



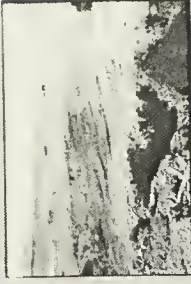
4/12/89 250

CAMERON CRK. LOADOUT  
 UNWATERING  
 ADIT TRENCH



4/12/89 241

CAMERON CRK. LOADOUT  
 WET AREA  
 CAUSED BY SNOW & ICE



4/12/89 246

CAMERON CRK. LOADOUT  
 DRESSING BORROW AREA  
 AND BURN PIT



4/12/89 251

CAMERON CRK. LOADOUT  
 DUMPING  
 COAL SLACK INTO ADIT TRENCH



4/12/89 242

CAMERON CRK. LOADOUT  
 TIPPLE BORROW AREA  
 AND BURN PIT



4/12/89 247

CAMERON CRK. LOADOUT  
 DRESSING  
 BORROW AREA

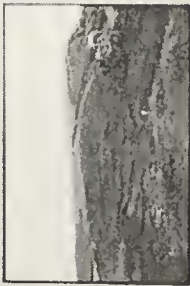


4/12/89 252





CAMERON CREEK LOADOUT  
DRESSING BORROW  
ON FACE OF TIPPLE ADIT



4/14/89 253

CAMERON CRK. LOADOUT  
PRECONTS  
TIPPLE AREA LOOKING N.E.



4/14/89 258

CAMERON CRK LOADOUT  
SPREADING  
MUCH TIPPLE ADIT BORROW



4/13/89 263

CAMERON CRK. LOADOUT  
FEET & DRAIN  
CAMP TIPPLE ADIT & BORROW



4/12/89 254

CAMERON CRK. LOADOUT  
DRESSING  
BORROW AREA



4/12/89 259

CAMERON CRK. LOADOUT  
CLIMPING  
BORROW AREA



4/12/89 264

CAMERON CRK. LOADOUT  
FEET COMP.  
ON TIPPLE ADIT & BORROW



4/12/89 255

CAMERON CRK. LOADOUT  
SPREADING TIPPLE ADIT, BORROW  
& BORROW AREA



W/ John D. & Beallson Dwell.  
4/12/89 260

CAMERON CRK LOADOUT  
CLIMPING  
ADIT AREA



4/13/89 265

CAMERON CRK. LOADOUT  
SPREADING TIPPLE ADIT &  
TRENCH & BORROW AREA



W/ John D. 4036  
& Beallson Dwell.  
4/12/89 256

CAMERON CRK. LOADOUT  
CLIMPING  
BORROW AREA



4/13/89 261

CAMERON CRK. LOADOUT  
CLIMPING  
ADIT FACE GARAGE



Pit BEING dug in  
BACK LOADOUT.  
4/12/89 266

CAMERON CRK. LOADOUT  
SPREADING TIPPLE ADIT  
TRENCH & BORROW AREA



John D. 4030 & Beallson  
4/12/89 257

CAMERON CRK. LOADOUT  
CLIMPING  
ADIT AREA



4/13/89 262

CAMERON CRK. LOADOUT  
CLIMPING  
TIPPLE ADIT AREA



4/12/89 267





CAMERON CREEK LOADOUT  
 CAMPING  
 ADIT MESA



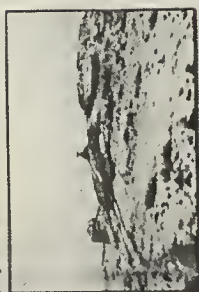
4/13/89 272

CAMERON CREEK LOADOUT  
 LARGE PIT DUG  
 FOR LANDOWNER



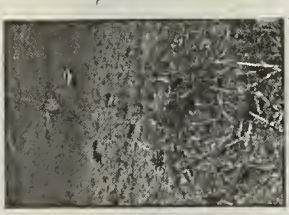
4/13/89 273

CAMERON CREEK LOADOUT  
 TOP CAT GRADING  
 TIPPLE COAL SLACK



4/13/89 278

CAMERON CREEK LOADOUT  
 THICK COAL SLACK



NEST ABOVE AS-4  
 4/13/89 279

CAMERON CREEK LOADOUT  
 PRE-CONST.  
 TIPPLE & COAL SLACK LOOKING N.



4/14/89 274

CAMERON CREEK LOADOUT  
 DRESSING  
 TIPPLE COAL SLACK PILE



4/14/89 279

CAMERON CREEK LOADOUT  
 OVERALL OF  
 WORK - JOB COMPLETE



LOOKING NE. 270  
 4/13/89

CAMERON CREEK LOADOUT  
 TIPPLE, COAL SLACK  
 AND SCALES PRE-CONST.



4/14/89 275

CAMERON CREEK LOADOUT  
 DISKING LIME ON  
 TIPPLE COAL SLACK



4/14/89 280

CAMERON CREEK LOADOUT  
 OUTSIDE OF  
 AREA - JOB COMPLETE



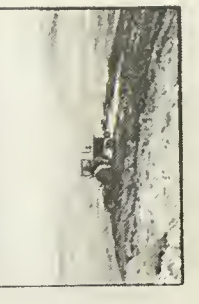
LOOKING N.E. 271  
 4/13/89

CAMERON CREEK LOADOUT  
 PRE-CONST.  
 TIPPLE COAL SLACK



4/14/89 276

CAMERON CREEK LOADOUT  
 DISKING LIME  
 TIPPLE COAL SLACK



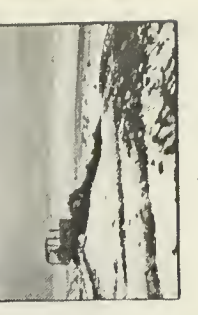
4/14/89 281

CAMERON CREEK LOADOUT  
 BARBARE  
 PIT DUG FOR LANDOWNER



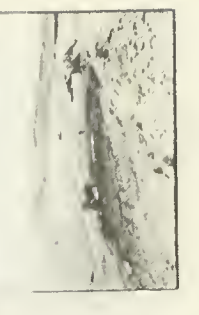
272  
 4/12/89

CAMERON CREEK LOADOUT  
 DRESSING  
 TIPPLE COAL SLACK



4/15/89 277

CAMERON CREEK LOADOUT  
 DISKING LIME  
 TIPPLE COAL SLACK



4/12/89 282





CAMERON CRK. LOADOUT  
SEEDING TIPPLE  
COAL SLACK



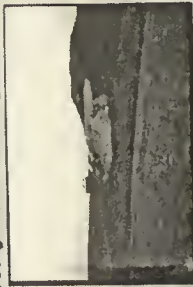
4/12/89 283

CAMERON CRK. LOADOUT  
SPREADING MULCH  
ON TIPPLE COAL SLACK



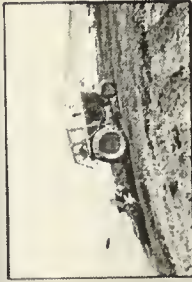
4/12/89 288

CAMERON CRK. LOADOUT  
CRIMPING  
TIPPLE COAL SLACK



4/12/89 293

CAMERON CRK. LOADOUT  
SEEDING  
TIPPLE COAL SLACK



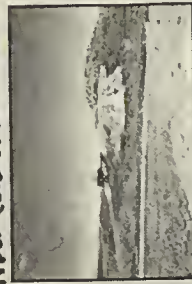
4/12/89 284

CAMERON CRK. LOADOUT  
CRIMPING  
TIPPLE LOADOUT COAL SLACK



4/12/89 289

CAMERON CRK. LOADOUT  
COMPLETED  
TIPPLE COAL SLACK AREA



4/14/89 294

CAMERON CRK. LOADOUT  
DISKING  
FERT TIPPLE COAL SLACK



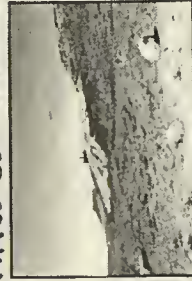
4/12/89 285

CAMERON CRK. LOADOUT  
CRIMPING  
TIPPLE COAL SLACK



4/12/89 290

CAMERON CRK. LOADOUT  
COMPLETED  
TIPPLE COAL SLACK AREA



4/14/89 295

CAMERON CRK. LOADOUT  
SEEDING TIPPLE  
COAL SLACK



4/12/89 286

CAMERON CRK. LOADOUT  
CRIMPING  
TIPPLE COAL SLACK



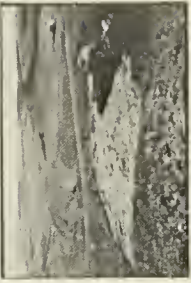
4/12/89 291

CAMERON CRK. LOADOUT  
COMPLETED  
TIPPLE COAL SLACK AREA



4/14/89 296

CAMERON CRK. LOADOUT  
SPREADING  
MULCH ON TIPPLE COAL SLACK



4/12/89 287

CAMERON CRK. LOADOUT  
CRIMPING ON  
TIPPLE COAL SLACK



4/12/89 292

CAMERON CRK. LOADOUT  
TIPPLE COAL  
SLACK AREA COMPLETED



4/13/89 297



**APPENDIX B**

**FINAL PAY REQUEST**

**AND**

**CHANGE ORDER**





RECEIVED

MAY 11 1989

Payment Request No. 2 - FINAL

From: January 31, 1989  
 Project Name: Cameron Creek, Schaff and Dunlap  
 Location: Golden Valley County, Montana  
 Name of Contractor: Tandy Construction

To: April 16, 1989 **STATE LANDS**  
 Project No.: Mont A/E 88-46-124  
 Address: P.O. Box 1057  
 Roberts, Montana 59070

---

 Summary Of Project Status

Amount of Original Contract	\$	17,825.00
Amount of Approved Change Order(s)		<del>1,694.15</del> - 988.14
TOTAL CONTRACT AMOUNT		<del>16,130.85</del> 16,836.86
Contract Time Used to Date	25 Days	BAM 5/11/89
Percentage of Contract Time Used	42 %	
Percentage of Contract Amount Earned	100 %	

---

Original Contract Amount Completed	17,825.00
Change Order(s) Amount Completed	<del>1,694.15</del> - 988.14
Amount for Material On Site	0.00
TOTAL To Date	<del>16,130.85</del> 16,836.86
Times 90% =	NO RETAINAGE
TOTAL AMOUNT Earned to Date	<del>16,130.85</del> 16,836.86
Less Previous Amount Earned	5,776.55
Amount Payable This Period	<del>10,354.30</del> 11,060.31
Less 1% Gross Receipts Tax	<del>103.54</del> 110.60
TOTAL DUE CONTRACTOR THIS PERIOD	<del>10,250.76</del> 10,949.71

---

Requested By: Tandy Construction

James Tandy  
 (Contractor)

Date:

4/24/89 BAM 5/11/89

Checked By: Spectrum Engineering

William C. Maell  
 (Engineer)

Date:

5/5/89

Approved By: Department of State Lands  
 Abandoned Mine Reclamation Bureau

S. M. Gally  
 (Owner)

Date:

5/11/89



PAYMENT REQUEST NO. 2 - FINAL  
SPECTRUM ENGINEERING

FROM: JANUARY 31, 1989  
TO: APRIL 16, 1989  
PROJECT: CAMERON CREEK, SCHAFF, AND DUNLAP  
GOLDEN VALLEY COUNTY  
PROJECT NO.: MONT. A/E 88-46-124

CONTRACTOR: TANDY CONSTRUCTION  
ADDRESS: P.O. BOX 1057  
ROBERTS, MT 59070

ITEMIZATION OF QUANTITIES AND COSTS

Page 2 of 2

Item No.	Estimated Plan Quantity	Unit	Description	Unit Price Bid	Total Price Bid	Units of Work Completed This Request	Units of Work Completed To Date	Total Cost of Completed Work	% of Estimated Quantity Complete
1	1	LUMP SUM	MOBILIZATION	XXXXXXX	\$2,000.00	1.0	1.0	\$2,000.00	100%
2	1	LUMP SUM	DEBRIS REMOVAL	XXXXXXX	4,000.00	0.31	1.0	4,000.00	100%
3	1	LUMP SUM	SALVAGE AND REPLACE TOPSOIL	XXXXXXX	2,200.00	0.0	1.0	2,200.00	100%
4	19.5	KGAL	PROVIDE WATER	41.0256	800.00	2.00	2.22	91.08	100%
5	1	LUMP SUM	CLOSE 9 ADIT/SHAFT OPENINGS	XXXXXXX	2,000.00	0.778	1.000	2,000.00	100%
6	3	EACH	INSTALL STEEL GRATES IN ADITS	500.00	1,500.00	0.0	3.0	1,500.00	100%
7	1	LUMP SUM	SUBSIDENCE AND/OR ADIT DEPRESSION BACKFILL	XXXXXXX	1,000.00	0.787	1.000	1,000.00	100%
8	1.54	ACRES	LIME PLACEMENT	1623.377	2,500.00	0.850	1.368	2,220.78	100%
9	3.34	ACRES	FERTILIZE, SEED AND MULCH	516.467	1,725.00	1.240	1.973	1,018.99	100%
10	1	EACH	FARM FENCE SINGLE PANEL	100.00	100.00	1.00	1.00	100.00	100%
ALL			TOTAL		\$17,825.00			\$16,130.85	100%









The completion date as set forth in the Contract Documents shall be (un-  
changed, increased, decreased) by 0 calendar days.

The date for completion of all work will be April 15, 1989.

Description and Justification for Change:

1. Bid Item 4 - Less water was required due to damp conditions.
2. Bid Item 8 - Slightly less acreage was limed due to site plan modifications.
3. Bid Item 9 - Less acreage required revegetation.
4. Bid Item 10 - Fence kit was used in place of farm fence single panel at request of landowner.

---

SURETY CONSENT

The Surety hereby consents to the aforementioned Contract Change Order and agrees that its bonds shall apply and extend to the contract as there by modified or amended per this Change Order. The Principal and the surety further agree that on or after execution of this consent, the penalty of the applicable Performance Bond or Bonds is hereby increased by \_\_\_\_\_ (\$\_\_\_\_\_) (one hundred (100) percent of the Change Order amount) and the penalty of the applicable Payment Bond or Bonds is hereby increased by \_\_\_\_\_ (\$\_\_\_\_\_) (one hundred (100) percent of the Change Order amount).

COUNTERSIGNED BY MONTANA  
RESIDENT AGENT

SURETY

By: \_\_\_\_\_  
(Seal)

Recommended by: William C. Mueller, Engineer

Accepted by: James Tandy, Contractor

Approved by: Susan Maxwell, Owner



QUANTITY VARIATIONS ON WORK ITEMS COMPLETED AS OF APRIL 15, 1989

ITEM NO.	DESCRIPTION OF CHANGES-EST. QUANTITIES & UNITS	COST OF CHANGES			UNIT	CONTRACT	TOTAL
		EST.	QUANTITY ACTUAL	DIFFERENCE		UNIT COST	COST
4.	Provide Water	19.5	2.22	-17.28	KGAL	41.0256	-708.92
8.	Lime Placement	1.54	1.368	- 0.172	Acre	1623.377	-279.22
9.	Fertilize, Seed & Mulch	3.34	1.973	- 1.367	Acre	516.467	<del>-706.01</del> 100.00
10.	Farm Fence Single Panel	1	0	- 1	Each	N/A	<u>N/A</u>
						TOTAL	<u><u>-1694.15</u></u>
							-988.14
							Blm
							5/11/89





## **APPENDIX C**

### **ENGINEERING VERSUS CONSTRUCTION COST ANALYSIS**



CAMERON CREEK, SCHAFF, AND DUNLAP  
FINAL REPORT

ANALYSIS OF PROFESSIONAL SERVICE FEES  
DATE OF PREPARATION: JUNE 28, 1989

PROFESSIONAL SERVICE	AMOUNT
o Data Gathering, Site Evaluation, Mapping, Preliminary and Final Engineering, Bid Documents	\$ 12,511.49
o Construction Administration, Construction Inspection, Final Report Preparation	\$ 14,454.95
SPECTRUM ENGINEERING COSTS	<u>\$ 26,966.44</u>
FINAL CONSTRUCTION COST	<u>\$ 16,836.86</u>

PERCENTAGE ANALYSIS	PERCENT
DESIGN ENGINEERING COST COMPARED TO CONSTRUCTION COST	74.3 %
CONSTRUCTION ENGINEERING COST COMPARED TO CONSTRUCTION COST	85.9 %
TOTAL ENGINEERING COST COMPARED TO CONSTRUCTION COST	160.2 %

REMARKS: Services provided include lien determination, landowner contact and consent, budget preparation, grant application, weed board approval, basic engineering, construction staking, contract administration, quantity accounting and full time construction/reclamation inspection. The project involved three sites with diverse reclamation requirements.





**APPENDIX D**

**BID TABULATION AND  
ENGINEER'S ESTIMATE**



Abandoned Mine Reclamation Bureau

CAMERON CREEK, SCHAFF, AND DUNLAP PROJECT  
Musselshell/Golden Valley Counties, Montana  
MONT A/E 88-46-124

Bid Opening: November 17, 1988

ENGINEER'S ESTIMATE  
Spectrum Engineering  
Billings, Montana

Tandy Constr.  
Roberts  
2603B

Brindley  
Wimmett  
6592A

Valley Excavating  
Helena  
2758B

Item No.	Est. Quantity	Unit	Description	Unit	Total Price	Unit Price	Unit	Total Price	Unit Price	Unit	Total Price
1	1	LUMP SUM	MOBILIZATION	XXXXXX	\$3,500.00	XXXXXX	XXXXXX	\$3,500.00	XXXXXX	XXXXXX	\$2,500.00
2	1	LUMP SUM	DEBRIS REMOVAL	XXXXXX	5,500.00	XXXXXX	XXXXXX	4,000.00	XXXXXX	XXXXXX	4,500.00
3	1	LUMP SUM	SALVAGE AND REPLACE TOPSOIL	XXXXXX	300.00	XXXXXX	XXXXXX	2,200.00	XXXXXX	XXXXXX	375.00
4	19.5	KGAL	PROVIDE WATER	50.00	975.00	41.03	800.00	61.54	1,200.03	48.72	950.00
5	1	LUMP SUM	CLOSE 9 ADIT/SHAFT OPENINGS	XXXXXX	2,300.00	XXXXXX	XXXXXX	2,000.00	XXXXXX	XXXXXX	810.00
6	3	EACH	INSTALL STEEL GRATES IN ADIT ENTRANCE	800.00	2,400.00	500.00	1,500.00	375.00	1,125.00	150.00	450.00
7	1	LUMP SUM	SUBSIDENCE AND/OR ADIT DEPRESSION BACKFILL	XXXXXX	1,816.00	XXXXXX	XXXXXX	1,000.00	XXXXXX	XXXXXX	3,020.00
8	1.54	ACRES	LIME PLACEMENT	2500.00	3,850.00	500.00	2,500.00	1200.00	1,848.00	1200.00	1,848.00
9	3.34	ACRES	FERTILIZE, SEED AND MULCH	2777.85	9,278.00	516.47	1,725.00	1150.00	3,841.00	1000.00	3,340.00
10	1	EACH	FARM FENCE SINGLE PANEL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
TOTAL BASE BID					\$30,019.00			\$17,825.00			\$17,893.00

MONT A/E 88-46-124

ENGINEER'S ESTIMATE  
Spectrum Engineering  
Billings, Montana

Baxter  
Billings

Euster's Constr.  
Billings

DeBuff  
Lewistown

Item No.	Est. Quantity	Unit	Description	Unit	Total Price	Unit Price	Unit	Total Price	Unit Price	Unit	Total Price
1	1	LUMP SUM	MOBILIZATION	XXXXXX	\$3,500.00	XXXXXX	XXXXXX	\$2,200.00	XXXXXX	XXXXXX	\$3,000.00
2	1	LUMP SUM	DEBRIS REMOVAL	XXXXXX	5,500.00	XXXXXX	XXXXXX	3,360.00	XXXXXX	XXXXXX	4,000.00
3	1	LUMP SUM	SALVAGE AND REPLACE TOPSOIL	XXXXXX	300.00	XXXXXX	XXXXXX	375.00	XXXXXX	XXXXXX	800.00
4	19.5	KGAL	PROVIDE WATER	50.00	975.00	30.00	585.00	75.00	1,462.50	100.00	1,950.00
5	1	LUMP SUM	CLOSE 9 ADIT/SHAFT OPENINGS	XXXXXX	2,300.00	XXXXXX	XXXXXX	5,400.00	XXXXXX	XXXXXX	3,000.00
6	3	EACH	INSTALL STEEL GRATES IN ADIT ENTRANCE	800.00	2,400.00	750.00	2,250.00	500.00	1,500.00	800.00	2,400.00
7	1	LUMP SUM	SUBSIDENCE AND/OR ADIT DEPRESSION BACKFILL	XXXXXX	1,816.00	XXXXXX	XXXXXX	1,495.00	XXXXXX	XXXXXX	2,000.00
8	1.54	ACRES	LIME PLACEMENT	2500.00	3,850.00	1000.00	1,540.00	649.35	1,000.00	1000.00	1,540.00
9	3.34	ACRES	FERTILIZE, SEED AND MULCH	2777.85	9,278.00	1225.00	4,091.50	1500.00	5,010.00	1500.00	5,010.00
10	1	EACH	FARM FENCE SINGLE PANEL	100.00	100.00	60.00	60.00	500.00	500.00	100.00	100.00
TOTAL BASE BID					\$30,019.00			\$21,357.50			\$23,800.00



Abandoned Mine Reclamation Bureau

CAMERON CREEK, SCHAFF, AND DUNLAP PROJECT  
Musselshell/Golden Valley Counties, Montana  
MONT A/E 88-46-124

Bid Opening: November 17, 1988

ENGINEER'S ESTIMATE  
Spectrum Engineering  
Billings, Montana

Johnson  
Anaconda

Shumaker Trucking  
Great Falls

Moxley  
Chinook

Item No.	Est. Quantity	Unit	Description	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price
1	1	LUMP SUM	MOBILIZATION	XXXXXX	\$3,500.00	XXXXXX	\$3,000.00	XXXXXX	\$3,000.00	XXXXXX	\$2,000.00
2	1	LUMP SUM	DEBRIS REMOVAL	XXXXXX	5,500.00	XXXXXX	2,000.00	XXXXXX	2,500.00	XXXXXX	8,000.00
3	1	LUMP SUM	SALVAGE AND REPLACE TOPSOIL	XXXXXX	300.00	XXXXXX	750.00	XXXXXX	375.00	XXXXXX	1,700.00
4	19.5	KGAL	PROVIDE WATER	50.00	975.00	45.00	877.50	40.00	780.00	52.00	1,014.00
5	1	LUMP SUM	CLOSE 9 ADIT/SHAFT OPENINGS	XXXXXX	2,300.00	XXXXXX	2,700.00	XXXXXX	5,000.00	XXXXXX	1,200.00
6	3	EACH	INSTALL STEEL GRATES IN ADIT ENTRANCE	800.00	2,400.00	1300.00	3,900.00	1500.00	4,500.00	650.00	2,040.00
7	1	LUMP SUM	SUBSIDENCE AND/OR ADIT DEPRESSION BACKFILL	XXXXXX	1,816.00	XXXXXX	2,884.00	XXXXXX	1,916.00	XXXXXX	2,250.00
8	1.54	ACRES	LIME PLACEMENT	2500.00	3,850.00	500.00	6,930.00	1500.00	2,310.00	1480.00	2,279.00
9	3.34	ACRES	FERTILIZE, SEED AND MULCH	2777.85	9,278.00	1000.00	3,340.00	1868.00	6,305.92	2600.00	8,684.00
10	1	EACH	FARM FENCE SINGLE PANEL	100.00	100.00	50.00	50.00	300.00	300.00	100.00	100.00
TOTAL BASE BID					\$30,019.00		\$26,431.50		\$26,986.92		\$29,267.00





Abandoned Mine Reclamation Bureau

CAMERON CREEK, SCHAFF, DUNLAP PROJECT  
Musselshell/Golden Valley Counties, Montana  
MONT A/E 88-46-124

Bid Opening: November 17, 1988

STATISTICS

ENGINEER'S ESTIMATE  
Spectrum Engineering  
Billings, Montana

BID RANGE  
TOTAL COST

BID RANGE  
\$ PER UNIT

Item No.	Est. Quantity	Unit	Description	Unit Price	Total Price	LOW	HIGH	AVERAGE	LOW	HIGH	AVERAGE
1	1	LUMP SUM	MOBILIZATION	XXXXXX	\$3,500.00	\$2,000.00	\$5,000.00	\$2,911.11	\$2,000.00	\$5,000.00	\$2,911.11
2	1	LUMP SUM	DEBRIS REMOVAL	XXXXXX	5,500.00	2,000.00	8,000.00	3,715.53	2,000.00	8,000.00	3,715.53
3	1	LUMP SUM	SALVAGE AND REPLACE TOPSOIL	XXXXXX	300.00	375.00	2,200.00	1,062.78	375.00	2,200.00	1,062.78
4	19.5	KGAL	PROVIDE WATER	50.00	975.00	30.00	1,950.00	1,068.78	585.00	1,950.00	1,068.78
5	1	LUMP SUM	CLOSE 9 ADIT/SHAFT OPENINGS	XXXXXX	2,300.00	810.00	5,400.00	2,534.44	810.00	5,400.00	2,534.44
6	3	EACH	INSTALL STEEL GRATES IN ADIT ENTRANCE	800.00	2,400.00	150.00	4,500.00	2,185.00	450.00	4,500.00	2,185.00
7	1	LUMP SUM	SUBSIDENCE AND/OR ADIT DEPRESSION BACKFILL	XXXXXX	1,815.00	1,000.00	3,020.00	1,936.78	1,000.00	3,020.00	1,936.78
8	1.54	ACRES	LIME PLACEMENT	2500.00	3,850.00	500.00	1,500.00	1,003.26	1,000.00	5,930.00	2,421.67
9	3.34	ACRES	FERTILIZE, SEED AND MULCH	2777.85	9,278.00	516.47	2,600.00	1,375.50	1,725.00	8,684.00	4,594.16
10	1	EACH	FARM FENCE SINGLE PANEL	100.00	100.00	50.00	500.00	156.67	50.00	500.00	156.67
TOTAL BASE BID					\$30,019.00	\$7,431.47	\$34,670.00	\$17,949.85	\$9,995.00	\$46,184.00	\$22,586.91





